# PLANNING COMMISSION MEETING

**Monday, June 2, 2025**
**Community Auditorium, 1915 Main Street**

**Virginia (Ginny) Sanderson - CHAIR**

| | |
|---|---|
| Seth Berdahl | Dave Anderson |
| Brandon Culbertson | Nicole Ellis |
| Tim Farrell | Julie Stenberg |

https://us06web.zoom.us/j/89537429462?pwd=XiJxjbCxcbyl4AFKsJ4wyz5iZiYeoy.1

Meeting ID: 895 3742 9462
Passcode: 06022025

**A. Call to Order**

1. Roll Call

**B. Public Comment:** Public Comment Period for Non-Agenda Items: Anyone wishing to speak on an item not on the agenda may be heard at this time. In the interest of time, please limit comments to three minutes or less. Zoom attendees may use the “Raise Hand” option to be called on.

1. Written Public Comment

**C. Additions/Deletions**

**D. Public Hearings:**

1. File Number 311-25-000009-PLNG - Major Modification C.U.P. (Conditional Use Permit) regarding installation of athletic field lighting located at Neil Armstrong Middle School, 1777 Mountain View Lane

2. File Number 311-24-000031-PLNG - Multifamily Design Review & Site Review for 17-unit multifamily development located at 1930 23rd St.

**E. Business Meeting:**

1. Approval of Minutes - Monday, April 21st

2. Director's Report - Bryan to discuss the results from the 2040 Vision Labs

3. Announcement of next meeting - TBD

**F. Adjournment**

**Americans with Disabilities Act (ADA) Notice:** The City of Forest Grove will make reasonable

accommodations for participation in the meeting. Requests for assistance can be made by contacting the City Recorder's Office, 503-992-3235, mwoods@forestgrove-or.gov, at least 48-hours in advance of the meeting.

# Conditional Use Permit
# Staff Report and Recommendation

Community Development Department, Planning Division

| | |
|---|---|
| **REPORT DATE:** | May 23, 2025 |
| **HEARING DATE:** | June 2, 2025 |
| **LAND USE REQUEST:** | Major modification to the conditional use permit to allow installation of athletic field lighting |
| **FILE NUMBER(S):** | 311-25-000009-PLNG<br>CU-01-02/CU-01-03<br>CU-02-01 |
| **PROPERTY LOCATION:** | Northeast Corner of intersection of Mountain View Lane and Heather Street |
| **LEGAL DESCRIPTION:** | Washington County Tax Lot Map 1S 3 5AD; Tax Lot 1100 |
| **OWNER/APPLICANT(S):** | Applicant: Forest Grove School District<br>1728 Main Street, Forest Grove, Oregon 97116<br>Property Owner: Same |
| **COMPREHENSIVE PLAN MAP AND ZONING MAP DESIGNATIONS:** | Public<br>Institutional Zone |
| **APPLICABLE STANDARDS AND CRITERIA:** | City of Forest Grove Development Code:<br>§17.2.410 et. seq. Site Development Review<br>§17.2.210 et. seq. Conditional Use<br>§17.3.210 et. seq. Institutional Zones<br>§17.8.100 et. seq. General Development Standards |
| **REVIEWING STAFF:** | Matt Johnson (AICP), Senior Planner |
| **RECOMMENDATION:** | Staff recommends approval with conditions |

# I. LAND USE HISTORY

Development Code (DC) §17.2.210 et. seq. *Conditional Use* (in the Institutional Zone) requires that schools undergo review by the Planning Commission.

The existing middle school was constructed in 1980. Over the years, the school has authorized expansions to the school and alterations to on-site parking areas, landscaping, and pathways. The school features an existing athletic field on a separate property to the south (Tax Lot 1100) that provides athletic facilities for the school and to Fernhill Elementary School to the east. The existing facilities include a multipurpose athletic field and a track surrounding the perimeter of the field. The athletic field is used for a variety of school and community athletic activities.

With this request, the City considers plans to include new field lighting for the existing athletic field and track. The application was submitted to the City on April 2, 2025, and was deemed complete on April 21, 2025. Public notice for this application was mailed to property owners and residents within 300 feet of the site on May 13, 2025, and notice of this request was also, and published in the *News Times* on May 22, 2025.

The Plans Review Board had no comments or issues with this request. As of the writing of this report, no comments have been received from the public.

# II. PROJECT DESCRIPTION AND ANALYSIS

A. Description of Proposal: The proposal would result in the installation of four, 70-foot tall light poles (two north of the field, and two south of the field). The fixtures will be fully shielded. No physical changes to the site are proposed.

B. Existing Comprehensive Plan Designation and Zoning of Site and Area

| LOCATION | COMPREHENSIVE PLAN DESIGNATION | ZONE DISTRICT | LAND USE |
|---|---|---|---|
| Site | Public | Institutional | School |
| North | Public | Institutional | School |
| South | B- Standard /Light Industrial | Residential/ Light Industrial | Homestead Community/ Manufacturing |
| East | Public | Institutional | School |
| West | Light Industrial | Light Industrial | Vacant/Proposed Data Center |

C. Site Design: No changes to the site are proposed.

D. Setbacks and Height Requirements: Field light poles in the Institutional Zone do not have any setback or height requirements and are considered exempt, provided that City Staff finds that off-site light is limited to the extent feasible (17.3.220 Table 3-7).

Finding: Based on the photometric plans submitted with this application, staff finds that light encroachment is minimal.

E. Compatibility: There are several residents to the south within the Homestead Community (across Heather Street). As demonstrated by the preliminary plans, the

proposed field lighting avoids glare onto adjacent properties and rights-of-way that is greater than 0.5 foot-candles (fc). The light fixtures incorporate shielded hoods to mitigate the dispersion of light.

Finding: Based on the photometric plans submitted with this application, staff finds the lighting to meet the requirements of the development code.

F. Environmental Quality: There is no city record of any environmental issues. As there would be no increase in impervious surface, staff is not recommending any conditions of approval.

G. Landscaping, Buffering, and Screening: The subject site abuts institutional uses to the north and east; as depicted in Table 8-2, buffering and screening is not required between institutional uses/zones. Therefore, these requirements are not applicable.

H. Public Services: The site has existing utility connections. No new connections or upgrades are proposed or required with the installation of athletic field lighting.

## III. APPROVAL CRITERIA, FINDINGS AND ANALYSIS

DC §17.2.220 *Conditional Use Review Criteria* requires that the Commission find that the proposal complies with the following:

*(A) Physical Compatibility –*

1. *The proposed use will be compatible with adjacent developments based on characteristics such as the site size, building scale and style, setbacks, and landscaping;*

   Applicant's Response: As demonstrated by the Preliminary Plans, the planned improvements include new field lighting for an existing athletic field. The new field lighting is designed to allow use of the field during nighttime hours, particularly during winter months when daylight hours are short. The fields will continue to be used by the existing users of the site (school events and community groups). The planned field lighting will be shielded and angled towards the fields to avoid unnecessary light spill onto adjacent properties and rights-of-way. The planned lighting poles meet the setback and height requirements of the INST zoning district. The new lights are not planned to impact landscaping and will not require additional structures or site improvements. Therefore, this criterion is met.

   Finding: Staff concurs with the applicant's response. Therefore, this criterion is met.

2. *The proposed use will mitigate differences in appearance or scale through setbacks, screening, landscaping and other design features.*

   Applicant's Response: As demonstrated by the Preliminary Plans (Exhibit A), the planned field lighting will be shielded and angled downward to avoid unnecessary light spill onto adjacent properties and rights-of-way. The new light poles are planned to meet the setback and height standards of the INST zoning district. A photometric plan is included in the Preliminary Plans and

demonstrates that light spill onto adjacent properties and rights-of-way is minimal and will not adversely impact these areas. This criterion is met.

Finding: Staff concurs with the applicant's response. Therefore, this criterion is met.

*(B) Public Services –*

1. *The transportation system is capable of safely supporting the proposed use in addition to the existing uses in the area. Evaluation factors include street capacity and level of service, access to arterials, transit availability, on-street parking impacts, access requirements, neighborhood impacts, and pedestrian safety; and*

   Applicant's Response: The planned field lighting will not alter or increase the intensity of the existing school use. The planned improvements will not increase the number of students or staff at the existing school and will not increase the capacity of the existing school. The field lighting will not change the types of uses allowed on the athletic field and is solely intended to allow increased use of the field beyond daylight hours, particularly in winter months when days are shorter. Additional uses are not included with this application. Therefore, the planned improvements are not expected to impact the transportation system, and the existing system will continue to capably serve the existing school use. This criterion is met.

   Finding: Staff concurs with the applicant's response. Therefore, this criterion is met.

2. *Public services for water supply, sanitary sewer, storm water disposal, police and fire protection are capable of serving the proposed use and previously approved uses.*

   Applicant's Response: The school and its existing athletic fields are served by existing public services including water supply, sanitary sewer, stormwater disposal, and police and fire protection. The planned field lighting will not affect public service availability to the existing use and site and will not require alterations to the existing public services serving the site. Therefore, this criterion is met.

   Finding: Staff concurs with the applicant's response. Therefore, this criterion is met.

*(C) Livability – The proposed conditional use will not have significant adverse impacts on the livability of nearby lands due to:*

1. *Noise, glare from lights, late-night operations, odors, and litter; and*

   Applicant's Response: As demonstrated by the Preliminary Plans and the Lighting Cut Sheets, the planned field lighting will be shielded and angled downward to avoid unnecessary light spill onto adjacent properties and rights-of-way. A photometric plan is included in the Preliminary Plans and demonstrates that light spill is minimal and will not adversely impact adjacent

properties and rights-of-way. As discussed in the School District Field Light Operations Memorandum, the field lighting will generally be shut off by 10 p.m. to avoid late-night use of the fields. The fields will continue to be used by existing users for school events and community athletic events. Noise from these users is typical of an athletic field and will not exceed existing noise generated when the field is in use. Therefore, this criterion is met.

Finding: Staff concurs with the applicant's response. Therefore, this criterion is met.

2. *Privacy and safety issues.*

Applicant's Response: The existing athletic field is used for school events and community athletic events, and the planned improvements will not change the current users of the site. As discussed in the School District Field Light Operations Memorandum (Exhibit G), the field will be available to rent for non-school events by community groups and the school district will be responsible for renting the site to these groups. As demonstrated by the Preliminary Plans (Exhibit A) and the Lighting Cut Sheets (Exhibit I), the planned field lighting will avoid glare into adjacent properties and rights-of-way and will therefore not cause privacy issues for nearby property owners. Therefore, this criterion is met.

Finding: Staff concurs with the applicant's response. Therefore, this criterion is met.

## IV. ALTERNATIVES

The Planning Commission may approve as submitted, approve with conditions, continue deliberations to a date certain, or deny this request.

## V. RECOMMENDATION

Based on the information provided in the application and the findings above, staff recommends approval of the application to the major modification of the conditional use permit for athletic field lighting, with the following condition:

1. The applicant is bound to the project description and all representations made by the applicant during the application and decision-making proceeding.

## VI. LIST OF EXHIBITS

The following exhibits were received, marked, and entered into the record as evidence for this application at the time this staff report was written. Exhibits received after the date of this report will be marked beginning with the next consecutive letter and will be entered into the record at the time the public hearing is opened, prior to oral testimony.

**Exhibit A** Conditional Use Permit narrative and application materials, photometric plans, prepared and submitted by the applicant

# Neil Armstrong Middle School Field Lighting Major Modification to a Conditional Use Permit

**Date:** April 2025

**Submitted to:**
City of Forest Grove
Planning Division
1924 Council Street
PO Box 326
Forest Grove, OR 97116

**Applicant:**
Forest Grove School District
1728 Main Street
Forest Grove, OR 97116

**AKS Job Number:** 9897-05



AKS ENGINEERING & FORESTRY
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151

## Table of Contents


**I. Executive Summary ..... 2**
**II. Site Description/Setting ..... 2**
**III. Applicable Review Criteria ..... 2**
FOREST GROVE DEVELOPMENT CODE ..... 2
ARTICLE 2: LAND USE REVIEWS ..... 2
CONDITIONAL USE ..... 2
DESIGN REVIEW ..... 5
SITE DEVELOPMENT REVIEW ..... 6
ARTICLE 3: ZONING DISTRICTS ..... 6
INSTITUTIONAL ZONE ..... 6
ARTICLE 8: GENERAL DEVELOPMENT STANDARDS ..... 10
ACCESS AND CIRCULATION ..... 10
CLEAR VISION AREA ..... 11
OPEN SPACE, RECREATIONAL FACILITIES AND COMMON AREAS ..... 11
LANDSCAPING, SCREENING AND BUFFERING ..... 11
OFF-STREET PARKING AND LOADING ..... 13
LIGHTING STANDARDS ..... 13
**IV. Conclusion ..... 15**


## Tables


Table 1: Minimum Setbacks ..... 9


## Exhibits

**Exhibit A:** Preliminary Plans
**Exhibit B:** City Application Form
**Exhibit C:** Property Ownership Information
**Exhibit D:** Washington County Assessor's Map
**Exhibit E:** Clean Water Services Service Provider Letter
**Exhibit F:** Documentation of Prior Land Use Applications
**Exhibit G:** Memorandum from Forest Grove School District
**Exhibit H:** Lighting Memorandum (MUSCO)
**Exhibit I:** Lighting Cut Sheets
**Exhibit J:** Neighborhood Meeting Materials

# Neil Armstrong Middle School Field Lighting
# Major Modification to a Conditional Use Permit

| | |
|---|---|
| **Submitted to:** | City of Forest Grove<br>Planning Division<br>1924 Council Street<br>PO Box 326<br>Forest Grove, OR 97116 |
| **Applicant:** | Forest Grove School District<br>1728 Main Street<br>Forest Grove, OR 97116 |
| **Property Owners:** | Same as Applicant |
| **Applicant's Consultant:** | AKS Engineering & Forestry, LLC<br>12965 SW Herman Road, Suite 100<br>Tualatin, OR 97062<br><br>Contact: Sean Vermilya<br>Email: vermilyas@aks-eng.com<br>Phone: (503) 563-6151 |
| **Site Location:** | Northeast of the intersection of Mountain View Lane and Heather Street |
| **Washington County Assessor's Map:** | Map 1S 3 5AD; Tax Lot 1100 |
| **Total Lot Area:** | ±4.31 acres |
| **Land Use District:** | Institutional (INST) |

## I. Executive Summary

On behalf of the Forest Grove School District (Applicant/Property Owner), AKS Engineering & Forestry, LLC (AKS) is submitting this application for a Type III Major Modification to a Conditional Use Permit for new field lighting for the athletic fields at the Neil Armstrong Middle School. The existing middle school was constructed in 1980 and is considered a Conditional Use in the Institutional (INST) zoning district. As detailed in the narrative below, the school has been subject to multiple Conditional Use Permits since 1980 that have authorized expansions to the school and alterations to on-site parking areas, landscaping, and pathways.

The school features an existing athletic field on a separate property to the south (Tax Lot 1100) that provides athletic facilities to the school and to Fernhill Elementary School to the east. The existing facilities include a multipurpose athletic field and a track surrounding the perimeter of the field. The athletic field is used for a variety of school and community athletic activities. The planned improvements included with this application include new field lighting for the existing athletic field and track and are considered a Major Modification to a Conditional Use (the existing school).

This application includes the City of Forest Grove (City) application forms, written materials, and preliminary plans necessary for City staff to review and determine compliance with the applicable approval criteria. The evidence is substantial and supports the City's approval of the application.

## II. Site Description/Setting

The subject site is located at Washington County Assessor's Map 1S 3 5AD, Tax Lot 1100 and is ±4.31 acres in size. The site is south of the Neil Armstrong Middle School (1777 Mountain View Lane) and west of Fernhill Elementary School (4445 Heather Street) at the northeast corner of the intersection of Mountain View Lane and Heather Street. Frontages along Mountain View Lane and Heather Street are fully improved with sidewalks, landscape strips, street trees, and streetlights. The site and the adjacent schools are within the Institutional (INST) zoning district. The subject site is improved with an existing athletic field, a track surrounding the field, and a storage building on the north side of the field. Parking for the field is provided on the adjacent school sites.

## III. Applicable Review Criteria

### FOREST GROVE DEVELOPMENT CODE

#### ARTICLE 2: LAND USE REVIEWS

##### CONDITIONAL USE

###### § 17.2.210 PROCEDURE.

**Conditional uses are reviewed under a Type II or Type III procedure. In addition to the requirements of this section, conditional uses are required to meet applicable site plan and design review requirements of this Code (a separate application and fee is not required).**

**B. *Minor modifications.* A request for a minor modification to an approved conditional use may be reviewed provided the following criteria are met:**

**1. The alteration does not violate any conditions of approval; and**

**Response:** The existing middle school was constructed in 1980. The school site has been subject to conditional use permits since its construction, including the following:

**CU-01-02/CU-01-03**: Two approved conditional use permits for a new five-classroom building for the Positive Advancement Center for Education (PACE) on the elementary school property to the east of the subject site (Map 1S304BB, Tax Lot 600). (Based on aerial imagery and permit history for this tax lot, it does not appear that the approved building was ultimately constructed.)

**CU-02-01**: Approval for a conditional use permit for a seven-classroom expansion to the middle school. Additional improvements approved included changes to the parking area on the north part of the site and additional landscaping.

Exhibit F includes documentation of the prior land use applications, including conditions of approval for approved conditional use permits. The planned improvements are not in violation of any of the prior conditions of approval found in Exhibit F. Therefore, this criterion is met.

> 2. The individual or cumulative alterations will not increase the floor area or exterior improvement area by more than 20%; and

**Response:** As demonstrated by the Preliminary Plans (Exhibit A), the planned improvements include new field lighting and will not increase the floor area or exterior improvement area of the existing middle school. Therefore, this criterion is met

> 3. The Director determines that there is a likelihood that the proposed modification would not result in noticeable impacts on adjacent properties.

**Response:** As demonstrated by the Preliminary Plans (Exhibit A), new lighting is planned to be directed downward and shielded to minimize spill onto adjacent rights-of-way and nearby properties. The field lighting will allow use of the athletic fields beyond daylight hours, particularly in winter months when days are shorter. As discussed in Exhibit G, the school district plans to limit use of the field to no later than 10 p.m. to prevent use of the field beyond reasonable hours. Use of the field will be regulated by the school district and use of the fields for non-school events (such as use by community sports groups) will be available only by reservation through the school district. The planned field lighting will not change the types of uses allowed on the field and is solely intended to allow increased field use beyond daylight hours. Therefore, the planned improvements will not change the existing use of the subject site, increase trips generated by the existing use, or otherwise impact adjacent properties. This criterion is met.

> If the request meets the above criteria, notice of the proposed request shall be sent consistent with a Type II process. If the department receives any negative response from the notices, then the applicant shall file for a conditional use permit as a new application to be reviewed by the Planning Commission.

**Response:** This procedural requirement is understood and will be met.

C. *Major modifications.* All other alterations to the site or use will be reviewed under Type III procedures.

**Response:** This application includes a Major Modification to an existing Conditional Use (Neil Armstrong Middle School) for field lighting for an existing athletic field. Therefore, this application is being processed according to the Type III procedures.

(…)

§ 17.2.220 REVIEW CRITERIA.

All of the following criteria must be met for approval of a new conditional use, or the major modification of an existing conditional use:

A. Physical compatibility.

1. The proposed use will be compatible with adjacent developments based on characteristics such as the site size, building scale and style, setbacks and landscaping; or

**Response:** As demonstrated by the Preliminary Plans (Exhibit A), the planned improvements include new field lighting for an existing athletic field. The new field lighting is designed to allow use of the field during nighttime hours, particularly during winter months when daylight hours are short. The fields will continue to be used by the existing users of the site (school events and community groups). The planned field lighting will be shielded and angled towards the fields to avoid unnecessary light spill onto adjacent properties and rights-of-way. The planned lighting poles meet the setback and height requirements of the INST zoning district. The new lights are not planned to impact landscaping and will not require additional structures or site improvements. Therefore, this criterion is met.

2. The proposed use will mitigate differences in appearance or scale through setbacks, screening, landscaping and other design features.

**Response:** As demonstrated by the Preliminary Plans (Exhibit A), the planned field lighting will be shielded and angled downward to avoid unnecessary light spill onto adjacent properties and rights-of-way. The new light poles are planned to meet the setback and height standards of the INST zoning district. A photometric plan is included in the Preliminary Plans and demonstrates that light spill onto adjacent properties and rights-of-way is minimal and will not adversely impact these areas. This criterion is met.

B. Public services.

1. The transportation system is capable of safely supporting the proposed use in addition to the existing uses in the area. Evaluation factors include street capacity and level of service, access to arterials, transit availability, on-street parking impacts, access requirements, neighborhood impacts and pedestrian safety; and

**Response:** The planned field lighting will not alter or increase the intensity of the existing school use. The planned improvements will not increase the number of students or staff at the existing school and will not increase the capacity of the existing school. The field lighting will not change the types of uses allowed on the athletic field and is solely intended to allow increased use of the field beyond daylight hours, particularly in winter months when days are shorter. Additional uses are not included with this application. Therefore, the

planned improvements are not expected to impact the transportation system, and the existing system will continue to capably serve the existing school use. This criterion is met.

2. Public services for water supply, sanitary sewer, stormwater disposal, police and fire protection are capable of serving the proposed use and previously approved uses.

**Response:** The school and its existing athletic fields are served by existing public services including water supply, sanitary sewer, stormwater disposal, and police and fire protection. The planned field lighting will not affect public service availability to the existing use and site and will not require alterations to the existing public services serving the site. Therefore, this criterion is met.

C. Livability. The proposed conditional use will not have significant adverse impacts on the livability of nearby lands due to:

1. Noise, glare from lights, late-night operations, odors and litter; and

**Response:** As demonstrated by the Preliminary Plans (Exhibit A) and the Lighting Cut Sheets (Exhibit I), the planned field lighting will be shielded and angled downward to avoid unnecessary light spill onto adjacent properties and rights-of-way. A photometric plan is included in the Preliminary Plans and demonstrates that light spill is minimal and will not adversely impact adjacent properties and rights-of-way. As discussed in the School District Field Light Operations Memorandum (Exhibit G), the field lighting will generally be shut off by 10 p.m. to avoid late-night use of the fields. The fields will continue to be used by existing users for school events and community athletic events. Noise from these users is typical of an athletic field and will not exceed existing noise generated when the field is in use. Therefore, this criterion is met.

2. Privacy and safety issues.

**Response:** The existing athletic field is used for school events and community athletic events, and the planned improvements will not change the current users of the site. As discussed in the School District Field Light Operations Memorandum (Exhibit G), the field will be available to rent for non-school events by community groups and the school district will be responsible for renting the site to these groups. As demonstrated by the Preliminary Plans (Exhibit A) and the Lighting Cut Sheets (Exhibit I), the planned field lighting will avoid glare into adjacent properties and rights-of-way and will therefore not cause privacy issues for nearby property owners. Therefore, this criterion is met.

## DESIGN REVIEW

### §17.2.310 APPLICABILITY.

Design review is required for the following:

A. New multi-unit developments with more than five units;

B. New commercial development;

C. Alterations, remodels or renovations of commercial development in the Town Center and Neighborhood Commercial zones which result in additional floor area of more than 400 square feet;

D. Alterations, remodels or renovations of commercial development in all other Commercial zones which result in additional floor area of more than 1,000 square feet;

E. New development in a historic district;

F. Alterations, remodels, renovations or relocations of a historic landmark; and

G. Alterations, remodels, renovations or relocations of a historic contributing building.

**Response:** The planned improvements include a Major Modification to a Conditional Use to install field lighting for existing athletic fields serving Neil Armstrong Middle School. The school is considered a Conditional Use in the INST zoning district and does not qualify for design review as described above. Therefore, the standards of this section are not applicable.

## SITE DEVELOPMENT REVIEW

### § 17.2.410 APPLICABILITY.

Site development review is required for the following:

(…)

F. As part of a Conditional Use permit application (§ 17.2.200); and

(…)

**Response:** This application is for a Major Modification to a Conditional Use Permit. Therefore, the standards of this section are applicable.

### § 17.2.450 REVIEW CRITERIA.

The Director shall review and approve, conditionally approve or deny the site development plan based on the following criteria:

A. The applicant demonstrates the site development plan complies with standards of the base zoning district (Article 3), any overlay district and the general development standards of Article 8.

**Response:** As demonstrated by the Preliminary Plans (Exhibit A) and discussed herein, the planned improvements comply with the standards of the INST zoning district. Therefore, this criterion is met.

B. The site development plan addresses the development standards in Article 5 (Natural Resource Areas, Tree Protection and Historic Resources) when such resources are present on or directly adjacent to the development site.

**Response:** The subject site does not contain Natural Resource Areas or Tree Protection and Historic Resources. This criterion is not applicable.

## ARTICLE 3: ZONING DISTRICTS

### INSTITUTIONAL ZONE

### § 17.3.210 USE REGULATIONS.

Refer to Article 12 for information on the characteristics of uses included in each of the Use Categories.

A. *Permitted uses.* Uses allowed in INST are listed in Table 3-6 with a "P." These uses are allowed if they comply with the development standards and other regulations of this Code.

B. *Limited uses.* Uses that are allowed subject to specific limitations are listed in Table 3-6 with an "L". These uses are allowed if they comply with the limitations listed in the footnotes to the table and the development standards and other regulations of this Code.

C. *Conditional uses.* Uses that are allowed if approved through the conditional use process are listed in Table 3-6 with a "C". These uses are allowed provided they comply with the conditional use approval criteria, the development standards, and other regulations of this Code. The conditional use process and approval criteria are stated in § 17.2.200.

D. *Not permitted uses.* Uses listed in Table 3-6 with an "N" are not permitted. Existing uses may be subject to the regulations of §§ 17.7.100 et. seq. Nonconforming Development.

E. *Accessory uses.* Uses that are accessory to a primary use are allowed if they comply with specific regulations for accessory uses and all development standards.

| Excerpt of Table 3-6: Institutional Zone Use Table | |
|---|---|
| Use Category | Institutional |
| Schools | C |

**Response:** The subject site contains an existing school that is considered a Conditional Use in the INST zoning district. As discussed above, the planned improvements constitute a Major Modification to an approved Conditional Use Permit and this application is being processed through a Type III procedure in the same manner as a Conditional Use Permit.

**§ 17.3.220 INSTITUTIONAL ZONE DEVELOPMENT STANDARDS.**

**(…)**

**B. *Development standards.* Development standards for the INST are summarized below:**

| Excerpt of Table 3-7: Dimensional Requirements | |
|---|---|
| **Standard** | **Institutional Zone** |
| Minimum Lot Size | 10,000 square feet |
| Minimum Lot Width | 50 feet |
| Minimum Lot Depth | None |
| Minimum Setbacks [1] | |
| Front | § 17.3.220 C |
| Interior Side | § 17.3.220 C |
| Corner (street side) | § 17.3.220 C |
| Rear | § 17.3.220 C |
| Maximum Setbacks [2] | § 17.3.220 C |
| Maximum Building Height[3] | Where adjacent to residential zoned area: 1 foot in height for every 1 foot from property line; maximum of 75 feet. Where adjacent to commercial or industrial zoned area: 4 stories |
| Minimum Landscape Area | 20% of the site |

Footnotes:

[1] Side or rear yard setbacks may be required where the INST zone abuts a Residential zone. The need for a side or rear yard setback to provide privacy, access to sunlight and a transition between zones shall be evaluated in the Conditional Use and/or Design Review Process.

[2] To ensure that new development is oriented to the street, maximum building setback standards may be established as part of the Conditional Use and or Design Review Process in the INST zone.

[3] Height limitations shall not apply to flag poles and field lights provided that the Community Development Director finds that off-site light intrusion is limited to the extent feasible.

**Response:** As demonstrated by the Preliminary Plans (Exhibit A), the planned improvements include new field lighting for an existing athletic field. The planned improvements do not include or require alterations to lot area, dimensions, landscaping, or the height of existing buildings. As described in footnote [3] in Table 3-7 above, the planned field lighting is exempt from the minimum height requirement of the INST zoning district. Therefore, these standards are met as applicable.

**C. *Setbacks.* The following setbacks shall be required for the construction of any structure in this zone.**

**1. The setback of any respective yard (front, side or rear ) shall be equal to the minimum and maximum required yards for the property abutting the respective yards lot line except as provided below.**

**Response:** According to the Forest Grove Zoning Designations Map, the site of the existing athletic field abuts the following zoning districts: INST to the north and east, Light Industrial (LI) to the west and south, and Single Family Residential (R-7) to the southeast.

**Figure 1: Excerpt of Forest Grove Zoning Map**

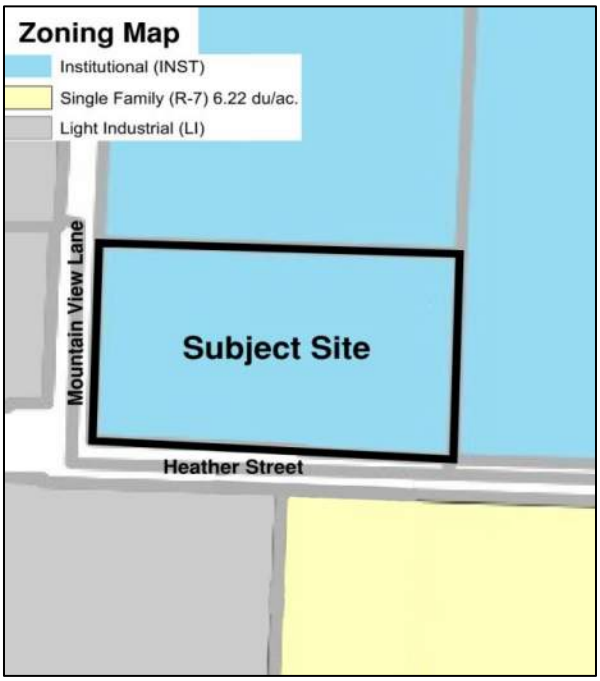



**Table 1: Minimum Setbacks**

| Property Line | Abutting Zone | Minimum Setback |
|---|---|---|
| West, Mountain View Lane | LI | None |
| North | INST | None |
| South, Heather Street | LI, R-7 | None (per Subsection 4) |
| East | INST | None |

The subject site (Tax Lot 1100) contains an existing athletic field and accessory structures that are related to the existing school located on the property to the north (Tax Lot 300). As demonstrated by the Preliminary Plans (Exhibit A), the planned lighting poles are located on the north and south sides of the existing athletic field, adjacent to the side and street side property lines, respectively. The lighting is ±8 feet from the north property line and ±21 feet from the south property line. As demonstrated by Table 1 above and described below, the subject site does not have minimum setback standards other than the screening and buffering standards of Article 8. Therefore, the setback standards of the INST zoning district are met.

> 2. In cases where the lot line of the INST zoned property abuts properties with two or more different yard requirements the required setback for abutting yard shall be equal to the average of the yards required (minimum or maximum) for the abutting properties.

**Response:** As demonstrated by Table 1 above, the subject site abuts the LI and R-7 zoning districts across from Heather Street along its south boundary. As discussed in response to Subsection 4 below, the subject site is separated from the residential use by a public right-of-way. Therefore, this standard is not applicable.

3. Additional setback requirements for any yard may be established for development that is subject to Conditional Use approval.

**Response:** This standard is understood.

4. An increased setback and buffer may be required where an INST boundary abuts a less intensive zone. See screening and buffering standards in §§ 17.8.400 et seq.

**Response:** See the responses to screening and buffering standards below for findings pertaining to this criterion.

Where conflicts exist, Article 8 standards shall prevail. When an institutional site is separated from a residential zone by either a dedicated public street or a railroad main line or spur track, no setback shall be required in that yard adjacent to the residential zone.

**Response:** The subject site is separated from a residential zone by the right-of-way of Heather Street. Therefore, no setback is required along the boundary of the site and Heather Street. See Table 1 above for additional setbacks.

D. *Institutional uses.* Institutional uses shall comply with the development standards in Article 8 as well as any other applicable standards in this Code.

**Response:** Findings addressing how the planned improvements meet the standards of Article 8 are found below.

§ 17.3.230 INSTITUTIONAL ZONE DESIGN STANDARDS.

All institutional development is subject to the design review process in Article 2 and standards provided in §17.8.885.

**Response:** Please refer to findings in response to Article 2 and those pertaining to pertinent design standards elsewhere in this narrative.

## ARTICLE 8: GENERAL DEVELOPMENT STANDARDS

### ACCESS AND CIRCULATION

§17.8.105 APPLICABILITY

A. When provisions apply. The provisions of this article shall apply to all development, including the construction of new structures, and the remodeling or new structures or a change of use which increases the on-site parking or loading requirements or which changes the access requirements.

B. *When site plan /design review is not required.* Where the provisions of site plan review or design review do not apply to the proposed developments, the Director shall approve, approve with conditions, or deny an access plan submitted under the provisions of this article in conjunction with another permit or land use action.

**Response:** The planned improvements include new field lighting for an existing athletic field serving an existing school. The planned improvements will not alter existing access and circulation, increase on-site parking or loading requirements, or change the access requirements. Therefore, the standards of this section are not applicable.

(…)

**CLEAR VISION AREA**

**§17.8.155 STANDARDS.**

**Except in the Town Center zones, a clear vision area shall be maintained on the corners of all property adjacent to the intersection of two streets, a street and a railroad, or a driveway providing vehicular access to a public street, excluding alleys.**

**A. On corner lots, no vehicle, fence, wall, hedge or other planting or structure shall be parked, erected, planted, placed, located or maintained, except for occasional tree trunks or poles, so as to impede visibility within the greater of the two clear vision areas defined below (see Figure 8-5):**

**1. The triangular area formed by the curb lines along such lots and a straight line joining said curb lines at points which are 30 feet distant from the intersection of the curb lines and measured along such lines;**

**Response:** The subject site is located at the intersection of Mountain View Lane and Heather Street. The planned improvements include field lighting for an existing athletic field serving an existing school. As demonstrated by the Preliminary Plans (Exhibit A), the planned field lighting poles will not be located within the clear vision area at the intersection of Mountain View Lane and Heather Street. The subject site does not contain an existing driveway and a new driveway is not included with the planned improvements. Therefore, this standard is met as applicable.

**(…)**

**E. Any obstruction maintained in violation of this section shall be deemed in violation of the Development Code and shall be abated pursuant to § 17.1.400 enforcement procedures.**

**Response:** The planned improvements do not include obstructions within the required vision clearance areas. This standard is not applicable.

**OPEN SPACE, RECREATIONAL FACILITIES AND COMMON AREAS**

**§ 17.8.200 PURPOSE.**

**The purpose of this subarticle is to establish standards for the provision of open space and recreational facilities, and where part of development , requirements for common areas.**

**Response:** The subject site contains existing open space, recreational facilities, and common areas both on-site and on adjacent sites under similar ownership. The planned improvements include new field lighting for the existing athletic field serving an existing school. As demonstrated by the Preliminary Plans (Exhibit A), the planned field lighting will not impact the existing open space on the subject site. This application does not include new stormwater facilities or alterations to existing stormwater facilities associated with the field or school uses. Therefore, the standards of this section are not applicable.

**(…)**

**LANDSCAPING, SCREENING AND BUFFERING**

**§17.8.405 APPLICABILITY.**

**A. Applicability. The provisions of this subarticle shall apply to all new development and to a change of use that results in the need for increased on-site parking.**

**Response:** As demonstrated by the Preliminary Plans (Exhibit A), the planned improvements include new field lighting for an existing athletic field that serves an existing school use. The planned improvements do not include a change of use that results in the need for increased on-site parking. However, the planned field lighting can be considered new development; therefore, the buffering and screening standards of this section are addressed below.

(…)

§17.8.425 BUFFERING AND SCREENING STANDARDS.

A. General provisions.

1. It is the intent that these requirements shall provide for privacy and protection and reduce or eliminate the adverse impacts of visual or noise pollution at a development site , without unduly interfering with the view from neighboring properties or jeopardizing the safety of pedestrians and vehicles;

**Response:** This provision is understood. The new field lighting is planned to minimize the impact of light spill onto adjacent properties and rights-of-way while providing sufficient nighttime lighting for school and community groups using the athletic fields.

2. Buffering and screening is required to reduce the impacts on adjacent uses which are of a different type in accordance with the matrices in this chapter (Tables 8-2, 8-3 and 8-4). The owner of each proposed development is responsible for the installation and effective maintenance of buffering and screening.

**Response:** The subject site is in the INST zoning district and abuts the rights-of-way of Mountain View Lane and Heather Street along its west and south property lines, respectively. Industrial uses to the west and south and residential uses to the south are separated from the site by the aforementioned rights-of-way. As discussed in the Lighting Memorandum (Exhibit H) and demonstrated by the Lighting Cut Sheets (Exhibit I), the planned field lighting will be shielded and angled downward to avoid light spill onto adjacent properties and rights-of-way. A photometric plan is included with the Preliminary Plans and demonstrates that light spill onto the adjacent properties and rights-of-way will be of negligible impact. Therefore, this provision is met.

3. In lieu of these standards, a detailed buffer area landscaping and screening plan may be submitted for the Director 's approval as an alternative to the standards, provided it affords the same degree of buffering and screening as required by this Code.

**Response:** As discussed in the Lighting Memorandum (Exhibit H) and demonstrated by the Lighting Cut Sheets (Exhibit I), the planned field lighting will be shielded and angled downward to avoid light spill onto adjacent properties and rights-of-way. Buffering and screening is not required to prevent light spill. Therefore, a detailed buffer area and landscaping plan is not included, and this standard is not applicable.

B. Buffering and screening requirements.

**Response:** As discussed in the Lighting Memorandum 9Exhibit H) and demonstrated by the Lighting Cut Sheets (Exhibit I), the planned field lighting will be shielded and directed downward

to avoid spill onto adjacent properties and rights-of-way. A photometric plan is included with the Preliminary Plans (Exhibit A) and demonstrates that screening and buffering is not required to prevent light spill onto and across the rights-of-way of Mountain View Lane and Heather Street. The subject site abuts institutional uses to the north and east; as depicted in Table 8-2, buffering and screening is not required between institutional uses/zones. Therefore, these requirements are not applicable.

(…)

**OFF-STREET PARKING AND LOADING**

**§17.8.505 APPLICABILITY.**

**A. New construction. At the time of the erection of a new structure within any residential, commercial, institutional and industrial zoning district, off-street vehicle parking shall be provided in accordance with this section. Except as specified in subsection D. below, uses in the Town Center zones are exempt from the requirement to provide off-street parking.**

**B. *Expansion of existing use .* At the time of an enlargement of a structure, which increases the on-site vehicle parking requirement, off-street vehicle parking shall be provided in accordance with this section, subject to the following:**

**1. On the date of adoption of this Code, the number of vehicle parking and loading spaces required shall be based only on floor area or capacity of such enlargement .**

(…)

**Response:** The existing athletic field on the subject site is used by the adjacent schools (Neil Armstrong Middle School and Fernhill Elementary School), and adequate parking is provided on the school sites for the schools. The athletic field is considered an accessory use to the existing school uses. This application does not include improvements that require additional parking. Therefore, the standards of this section are not applicable.

(…)

**LIGHTING STANDARDS**

(…)

**§ 17.8.755 GENERAL PROVISIONS.**

**A. When standards apply. Unless otherwise provided, the provisions of this subarticle apply to lighting that is part of a multi-family or commercial project, or lighting within one of the Town Center zoning districts.**

**Response:** As described in response to subsection G below, the planned improvements include new field lighting for a site located in the INST zoning district and are associated with an existing institutional use (Neil Armstrong Middle School). Therefore, the standards of this section are applicable.

**B. Adjustments. Adjustments to the provisions in this section may be considered as part of the Adjustment, Design Review, Conditional or Planned Development Process.**

**Response:** This application does not include an adjustment to the standards of this section. This standard is not applicable.

C. Luminous standards. Light intensity standards shall be as follows:

1. Outdoor lighting shall be provided in a manner that enhances security, is appropriate for the use, and avoids adverse impacts on surrounding properties. Glare shall not cause illumination on other properties in excess of a measurement of 0.5 foot-candles of light.

**Response:** The planned improvements include new field lighting for an existing athletic field that serves an existing school use. As demonstrated by the Preliminary Plans (Exhibit A), the planned field lighting avoids glare onto adjacent properties and rights-of-way that is greater than 0.5 foot-candles. The planned field lighting is intended to allow use of the field after daylight hours for uses such as student extracurricular activities and local sports group events. See Exhibit G for additional detail on the planned usage of the field. Therefore, this standard is met.

2. Street lights shall meet the lighting requirements of the Public Works Director upon consultation with the Light and Power Director.

**Response:** The planned improvements do not require or include streetlights. This standard is not applicable.

3. Pedestrian lighting standards:

**Response:** The planned improvements do not require or include pedestrian lighting. The standards of this section are not applicable.

E. Lighting standards for commercial development.

1. *Exterior building lighting.* Building lighting shall be directed downward with no splay of light off the site. Any light source over ten feet high shall incorporate cut-off shield.

**Response:** As demonstrated by the Lighting Cut Sheets (Exhibit I), the planned field lighting is ±70 feet tall, is directed downward, and includes cut-off shielding to prevent glare into adjacent properties and rights-of-way. A photometric plan is included in the Preliminary Plans (Exhibit A) and demonstrates that light spill into the adjacent rights-of-way is negligible and that light will not spill onto adjacent properties across the public rights-of-way. The adjacent schools to the north and east are not planned to be negatively impacted by light spill as school events will be the primary use for the athletic fields and classes will not be in session in evening hours when the field lights will be active. Therefore, this standard is met.

2. *Parking lot lighting.*

**Response:** This application does not include new parking lot lighting. These standards are not applicable.

3. Sidewalk and landscape lighting.

**Response:** This application does not include sidewalk or landscape lighting. These standards are not applicable.

4. Sign lighting.

a. Interior lighted plastic signs are prohibited.

b. Moving or flashing signs are prohibited.

**Response:** This application does not include a new sign or lighting for an existing sign. These standards are not applicable.

G. *Lighting Standards for Institutional Development*. Lighting standards for commercial development in subsection E. above shall apply to institutional uses.

**Response:** The subject site is located in the INST zoning district; therefore, the planned field lighting is subject to the standards of subsection E above.

## IV. Conclusion

The findings included within this narrative and accompanying documentation demonstrate that the application for a Major Modification to a Conditional Use is consistent with the applicable provisions of the Forest Grove Development Code. Therefore, the City can rely on this information in its approval of this application.

# **Exhibit A:** Preliminary Plans

# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Lighting System

### Pole/Fixture Summary

| Pole ID | Pole Height | Mtg Height | Fixture Qty | Luminaire Type | Load | Circuit |
|---|---|---|---|---|---|---|
| F1-F4 | 70' | 70' | 5 | TLC-LED-1500 | 7.05 kW | A |
| | | 16' | 2 | TLC-BT-575 | 1.15 kW | A |
| **4** | | | **28** | | **32.80 kW** | |

### Circuit Summary

| Circuit | Description | Load | Fixture Qty |
|---|---|---|---|
| A | Football | 32.80 kW | 28 |

### Fixture Type Summary

| Type | Source | Wattage | Lumens | L90 | L80 | L70 | Quantity |
|---|---|---|---|---|---|---|---|
| TLC-BT-575 | LED 5700K - 75 CRI | 575W | 52,000 | >120,000 | >120,000 | >120,000 | 8 |
| TLC-LED-1500 | LED 5700K - 75 CRI | 1410W | 181,000 | >120,000 | >120,000 | >120,000 | 20 |

### Single Luminaire Amperage Draw Chart

| Driver Specifications (.90 min power factor) | Line Amperage Per Luminaire (max draw) | | | | | | |
|---|---|---|---|---|---|---|---|
| Single Phase Voltage | 208 (60) | 220 (60) | 240 (60) | 277 (60) | 347 (60) | 380 (60) | 480 (60) |
| TLC-LED-1500 | 8.4 | 7.9 | 7.3 | 6.3 | 5.0 | 4.6 | 3.6 |
| TLC-BT-575 | 3.3 | 3.2 | 2.9 | 2.5 | 2.0 | 1.8 | 1.5 |

## Light Level Summary

### Calculation Grid Summary

| Grid Name | Calculation Metric | Illumination Ave | | | | | Circuits | Fixture Qty |
|---|---|---|---|---|---|---|---|---|
| | | Ave | Min | Max | Max/Min | Ave/Min | | |
| Football | Horizontal Illuminance | 33.44 | 26 | 47 | 1.81 | 1.30 | A | 28 |
| Heather St Spill @ 3ft. | Horizontal Illuminance | 0.0372 | 0.00 | 0.16 | 95.546 | 21.793 | A | 28 |
| Heather St Spill @ 5ft. | Max Candela Metric | 2650.5793 | 397.81 | 4861.95 | 12.222 | 6.663 | A | 28 |
| Heather St Spill @ 5ft. | Max Vertical Illuminance Metric | 0.0695 | 0.01 | 0.23 | 42.118 | 12.542 | A | 28 |
| Mountain V Lane Spill @ 3ft. | Horizontal Illuminance | 0.0075 | 0.00 | 0.02 | - | - | A | 28 |
| Mountain V Lane Spill @ 5ft. | Max Candela Metric | 902.6657 | 0.01 | 2500.81 | 299623.875 | 108149.250 | A | 28 |
| Mountain V Lane Spill @ 5ft. | Max Vertical Illuminance Metric | 0.0203 | 0.00 | 0.05 | - | - | A | 28 |
| Soccer | Horizontal Illuminance | 33.65 | 25 | 47 | 1.86 | 1.32 | A | 28 |
| Track | Horizontal Illuminance | 13.57 | 3 | 35 | 13.22 | 5.10 | A | 28 |

From Hometown to Professional



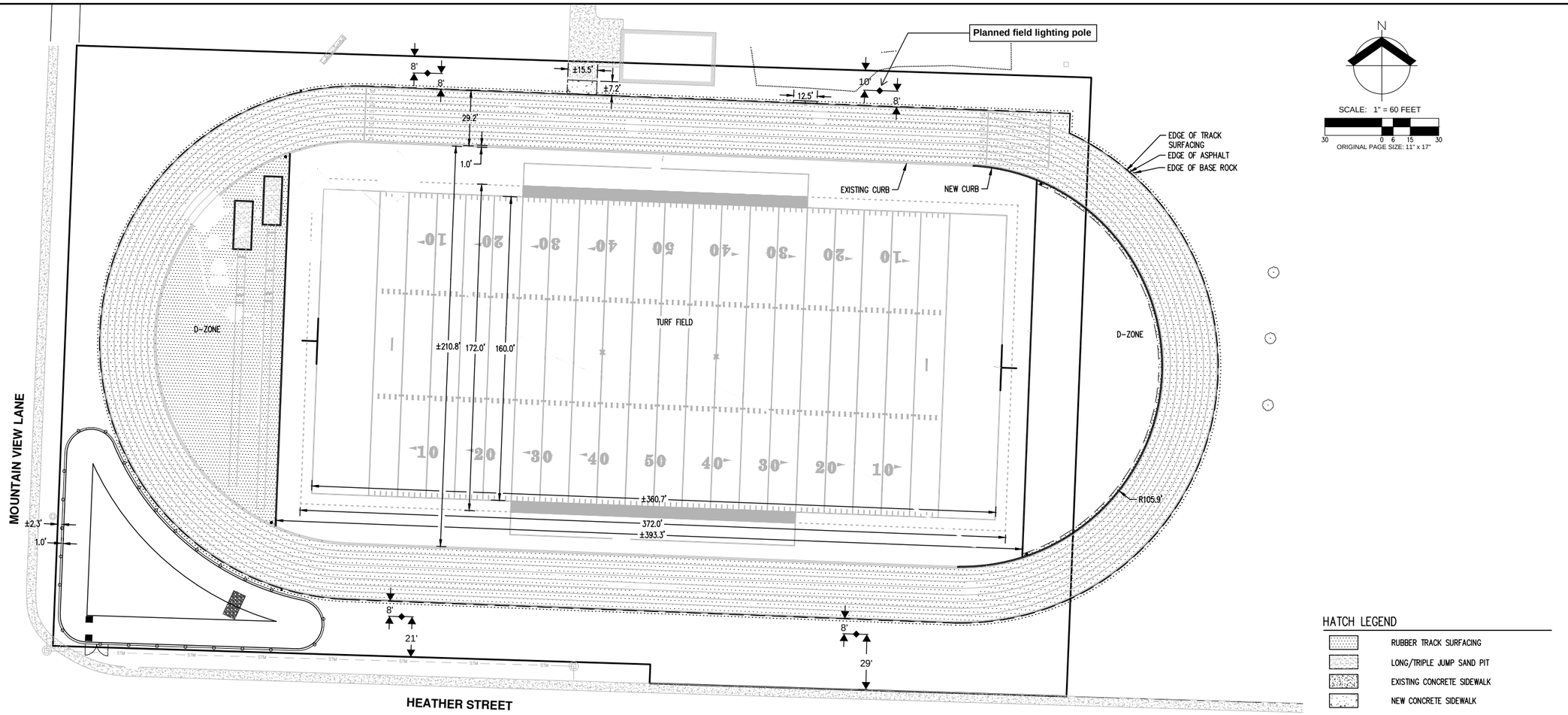






ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.




N

SCALE: 1" = 60 FEET

30 0 6 15 30

ORIGINAL PAGE SIZE: 11" x 17"

HATCH LEGEND

- RUBBER TRACK SURFACING
- LONG/TRIPLE JUMP SAND PIT
- EXISTING CONCRETE SIDEWALK
- NEW CONCRETE SIDEWALK


AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM


ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

# NEIL ARMSTRONG MIDDLE SCHOOL TRACK & FIELD REPLACEMENT

FOREST GROVE OREGON
TAX LOT 1100 WASHINGTON COUNTY TAX MAP 1S 3W 5AD

## SITE PLAN

| | |
|---|---|
| DESIGNED BY: | AMC |
| DRAWN BY: | JAM |
| MANAGED BY: | AMC |
| CHECKED BY: | CEG |

DATE: 04/28/2023

REGISTERED PROFESSIONAL ENGINEER
92709PE
OREGON
SEPTEMBER 14, 2007
AUSTIN MORGAN COLE
RENEWS: DECEMBER 31, 2023

REVISIONS

JOB NUMBER
9897-02

SHEET
**C100**

AKS DRAWING FILE: 9897-02 C100 SITE.DWG | LAYOUT: LAYOUT1

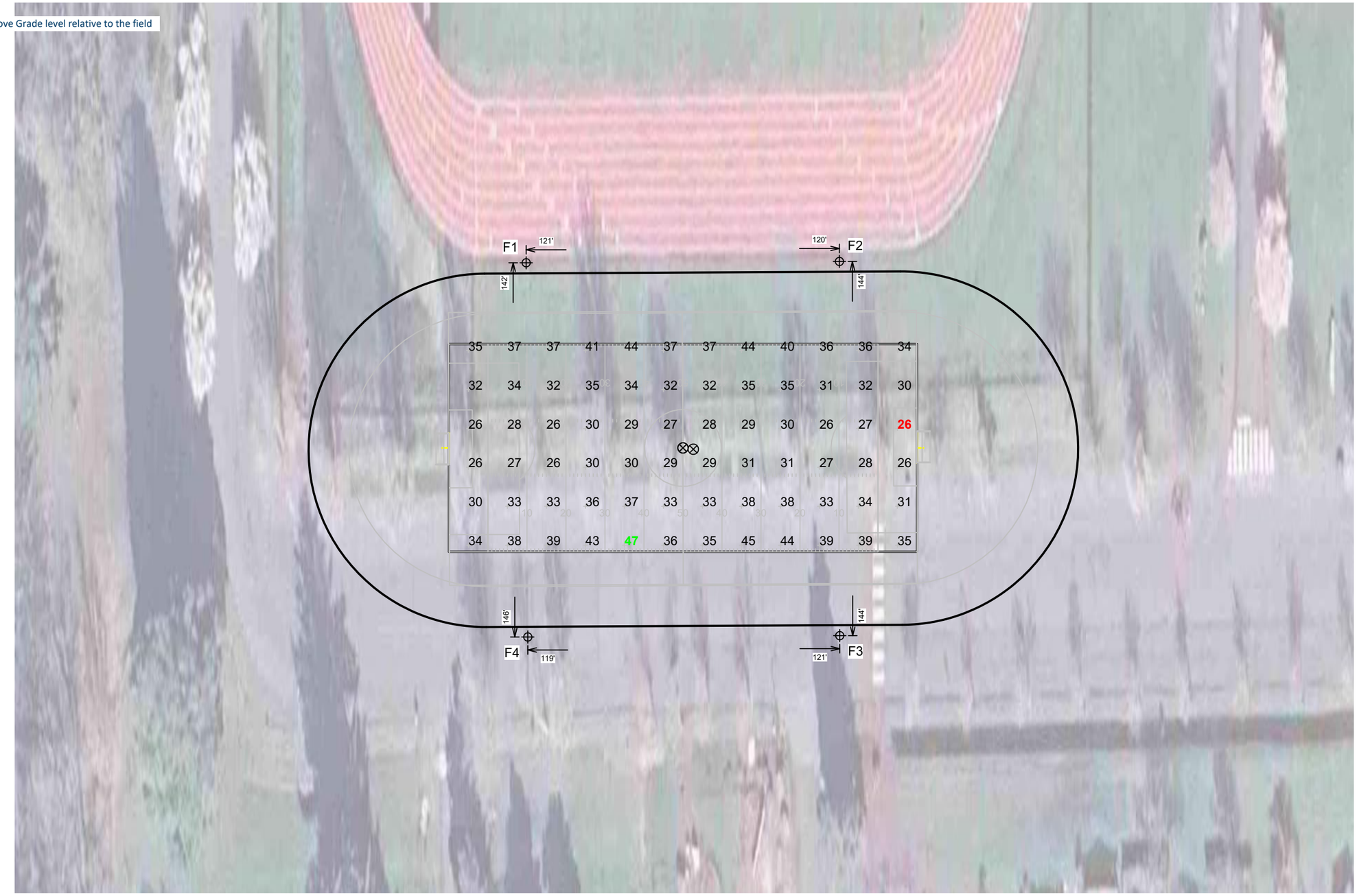
# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |

*Above Grade level relative to the field




## Grid Summary

| | |
|---|---|
| **Name:** | **Football** |
| Size: | 360' x 160' |
| Spacing: | 30.0' x 30.0' |
| Height: | 3.0' above grade |

## Illumination Summary

| MAINTAINED HORIZONTAL FOOTCANDLES | |
|---|---|
| | Entire Grid |
| **Guaranteed Average:** | **30** |
| Scan Average: | 33.44 |
| Maximum: | 47 |
| Minimum: | 26 |
| Avg/Min: | 1.30 |
| **Guaranteed Max/Min:** | **2.5** |
| Max/Min: | 1.81 |
| UG (adjacent pts): | 1.30 |
| CU: | 0.53 |
| No. of Points: | 72 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

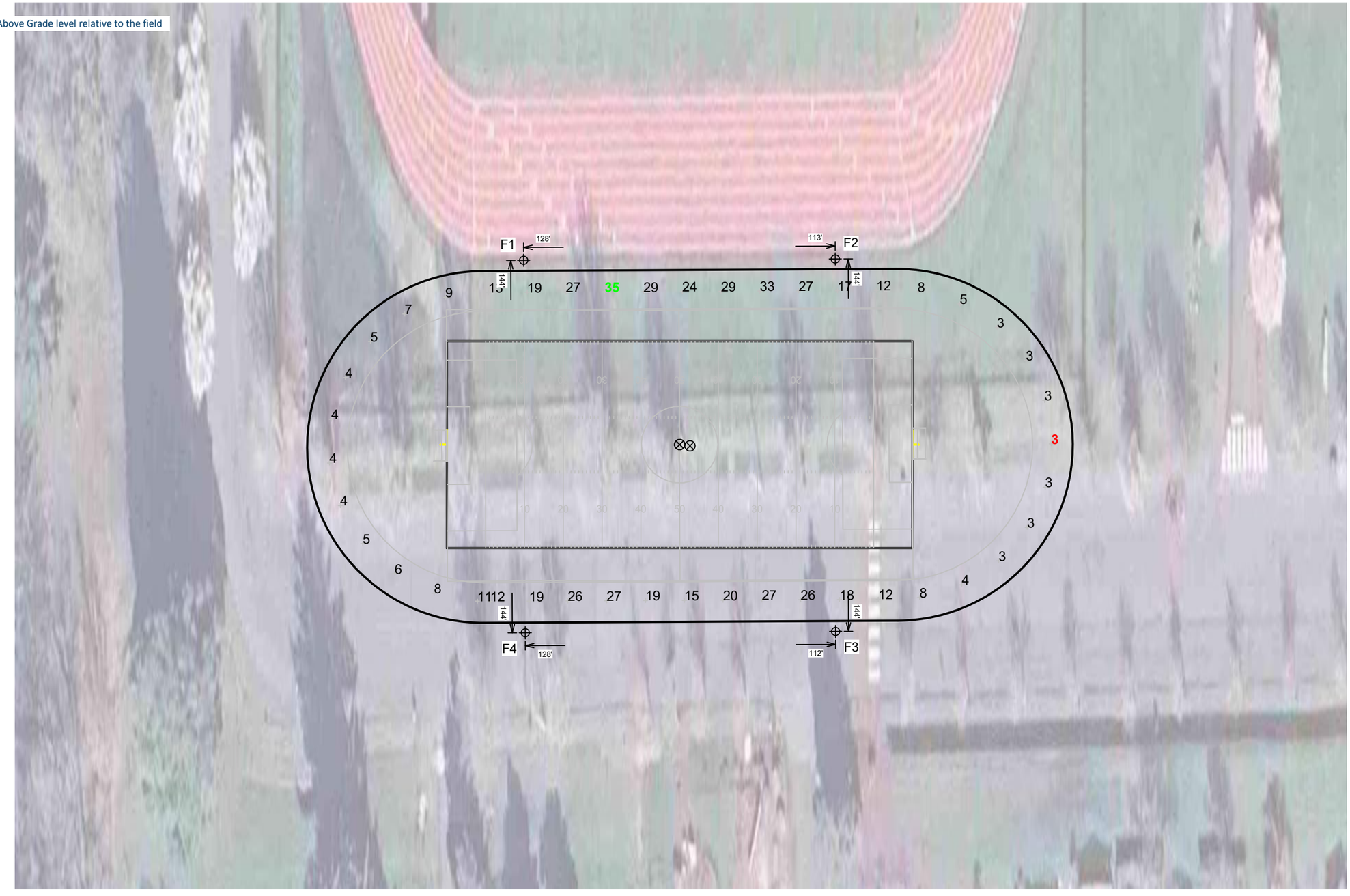
# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |

*Above Grade level relative to the field




## Grid Summary

| | |
|---|---|
| **Name:** | **Track** |
| Size: | Irregular |
| Spacing: | 30.0' x 30.0' |
| Height: | 3.0' above grade |

## Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

| | Entire Grid |
|---|---|
| **Scan Average:** | **13.57** |
| Maximum: | 35 |
| Minimum: | 3 |
| Avg/Min: | 5.10 |
| **Max/Min:** | **13.22** |
| UG (adjacent pts): | 0.00 |
| CU: | 0.13 |
| No. of Points: | 44 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

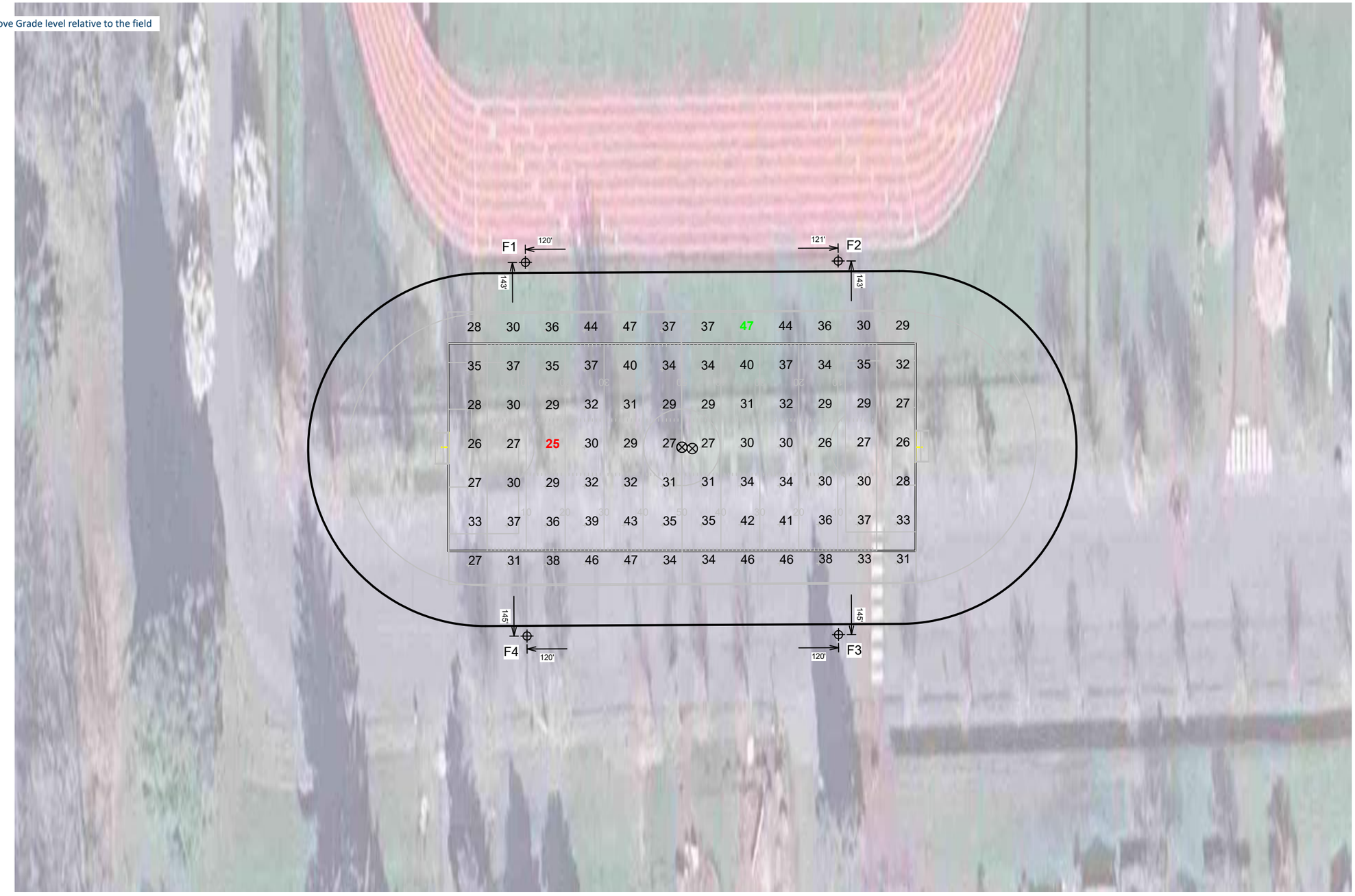
# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |

*Above Grade level relative to the field




## Grid Summary

| | |
|---|---|
| **Name:** | **Soccer** |
| Size: | 360' x 210' |
| Spacing: | 30.0' x 30.0' |
| Height: | 3.0' above grade |

## Illumination Summary

| MAINTAINED HORIZONTAL FOOTCANDLES | |
|---|---|
| | Entire Grid |
| **Guaranteed Average:** | **30** |
| Scan Average: | 33.65 |
| Maximum: | 47 |
| Minimum: | 25 |
| Avg/Min: | 1.32 |
| **Guaranteed Max/Min:** | **2.5** |
| Max/Min: | 1.86 |
| UG (adjacent pts): | 1.37 |
| CU: | 0.62 |
| No. of Points: | 84 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

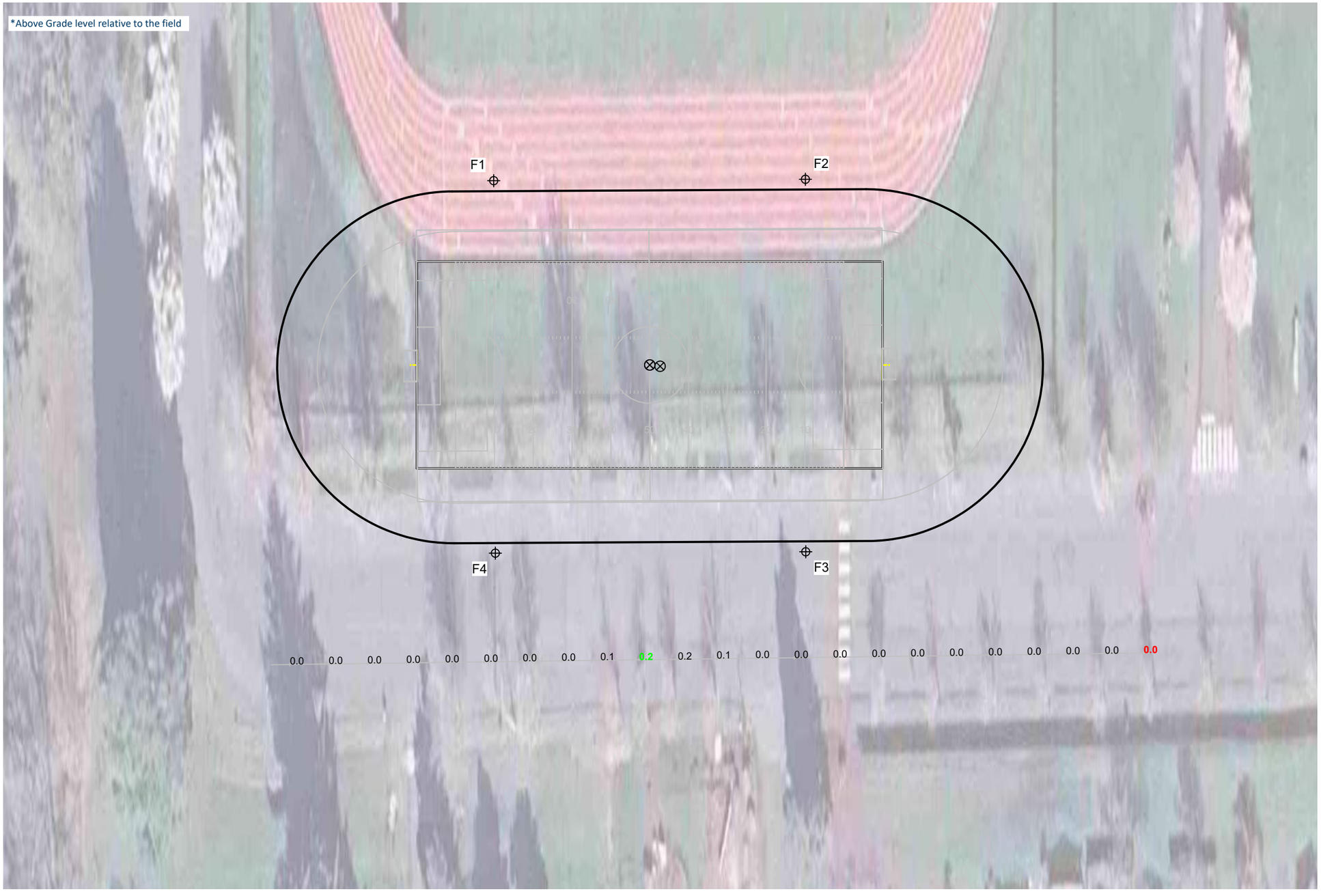
# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |

*Above Grade level relative to the field




## Grid Summary

| | |
|---|---|
| **Name:** | **Heather St Spill @ 3ft.** |
| Spacing: | 30.0' |
| Height: | 3.0' above grade |

## Illumination Summary

INITIAL HORIZONTAL FOOTCANDLES

| | Entire Grid |
|---|---|
| **Scan Average:** | **0.0372** |
| Maximum: | 0.16 |
| Minimum: | 0.00 |
| CU: | 0.00 |
| No. of Points: | 23 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

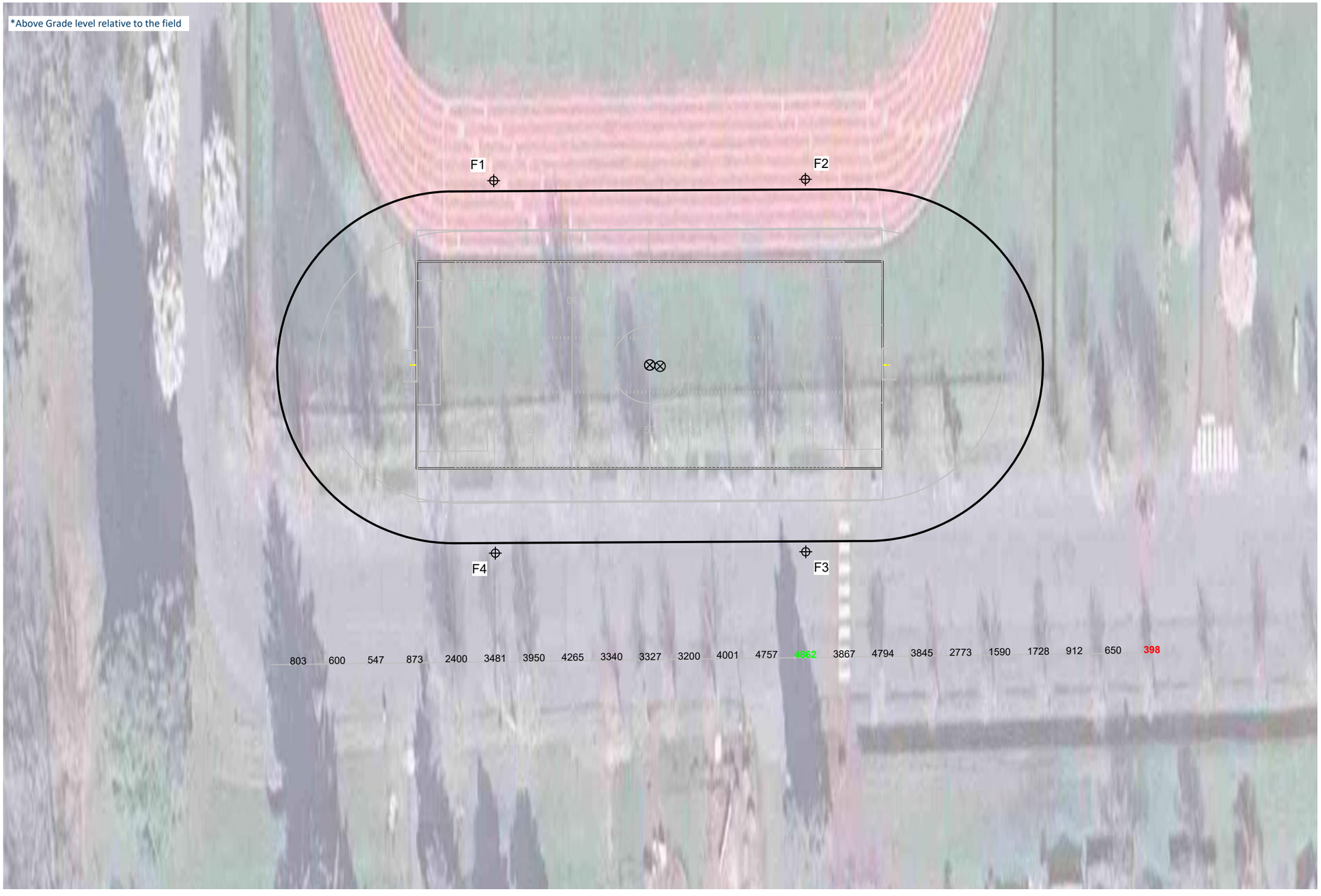
# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |

*Above Grade level relative to the field




## Grid Summary

| | |
|---|---|
| **Name:** | **Heather St Spill @ 5ft.** |
| Spacing: | 30.0' |
| Height: | 5.0' above grade |

## Illumination Summary

| | INITIAL CANDELA (PER FIXTURE) |
|---|---|
| | Entire Grid |
| **Scan Average:** | **2650.5793** |
| Maximum: | 4861.95 |
| Minimum: | 397.81 |
| CU: | 0.00 |
| No. of Points: | 23 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

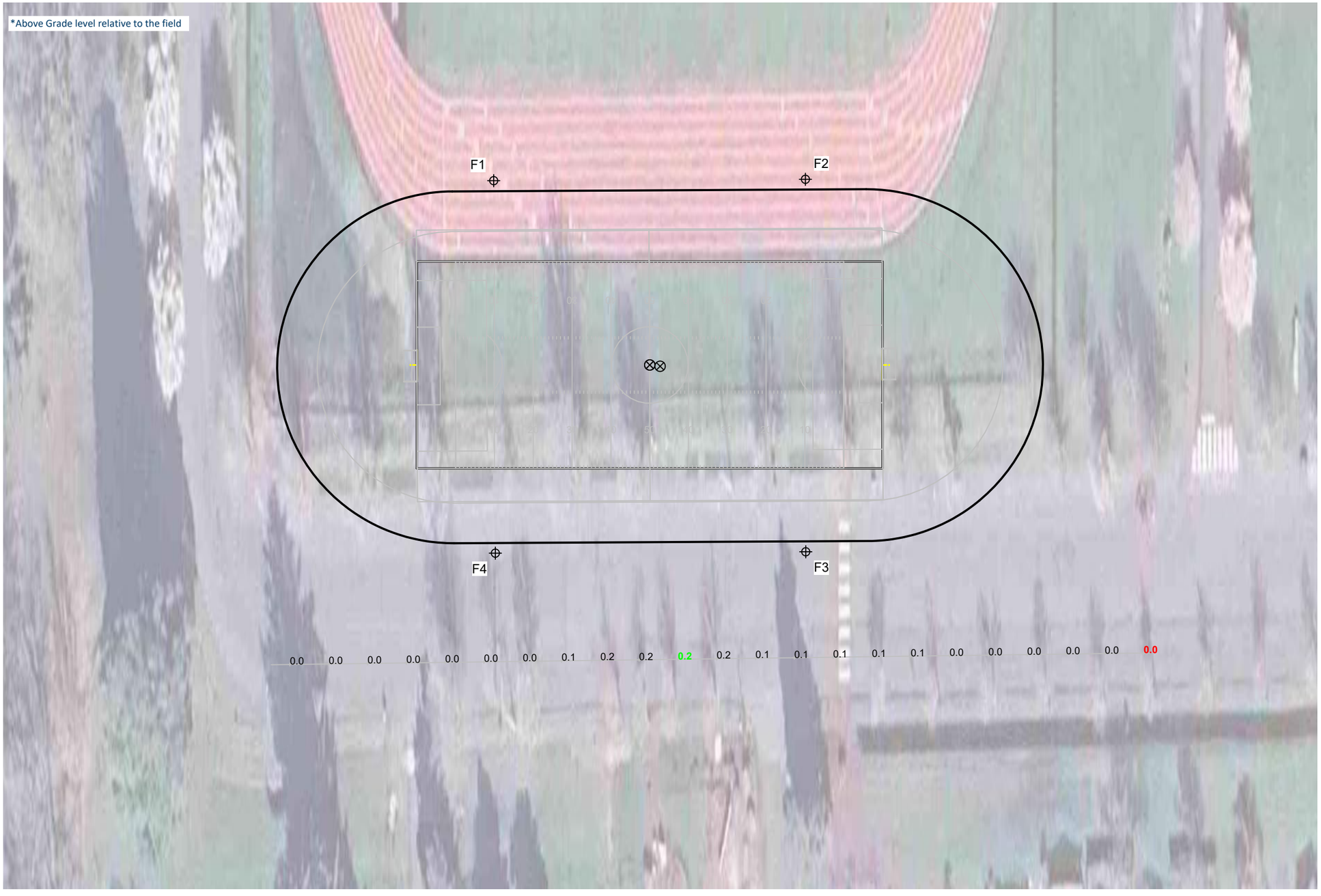
# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |

*Above Grade level relative to the field




## Grid Summary

| | |
|---|---|
| **Name:** | **Heather St Spill @ 5ft.** |
| Spacing: | 30.0' |
| Height: | 5.0' above grade |

## Illumination Summary

| | INITIAL MAX VERTICAL FOOTCANDLES |
|---|---|
| | Entire Grid |
| **Scan Average:** | **0.0695** |
| Maximum: | 0.23 |
| Minimum: | 0.01 |
| CU: | 0.00 |
| No. of Points: | 23 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

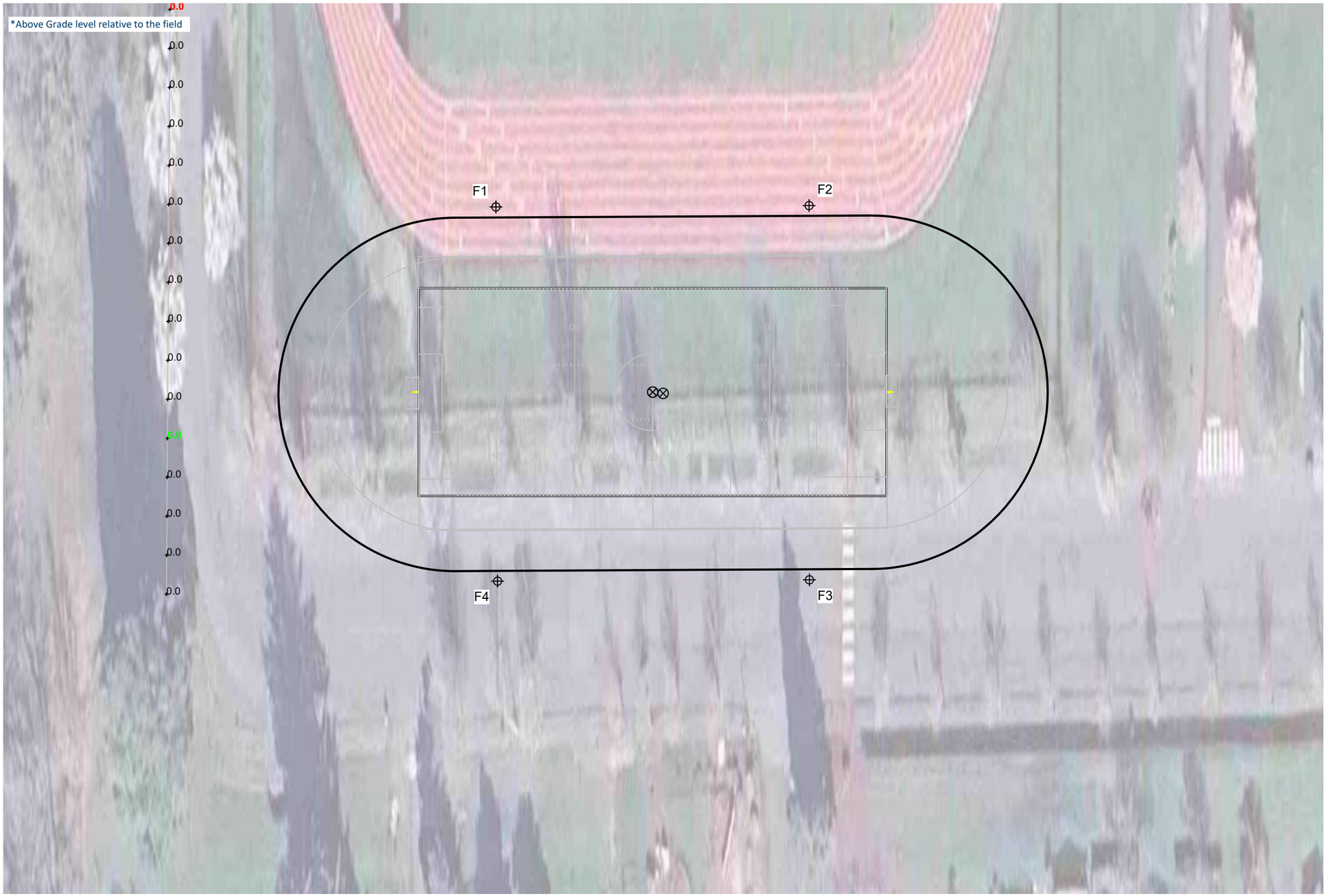
Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |




## Grid Summary

| | |
|---|---|
| **Name:** | **Mountain V Lane Spill @ 3ft.** |
| Spacing: | 30.0' |
| Height: | 3.0' above grade |

## Illumination Summary

| | INITIAL HORIZONTAL FOOTCANDLES |
|---|---|
| | Entire Grid |
| **Scan Average:** | **0.0075** |
| Maximum: | 0.02 |
| Minimum: | 0.00 |
| CU: | 0.00 |
| No. of Points: | 21 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

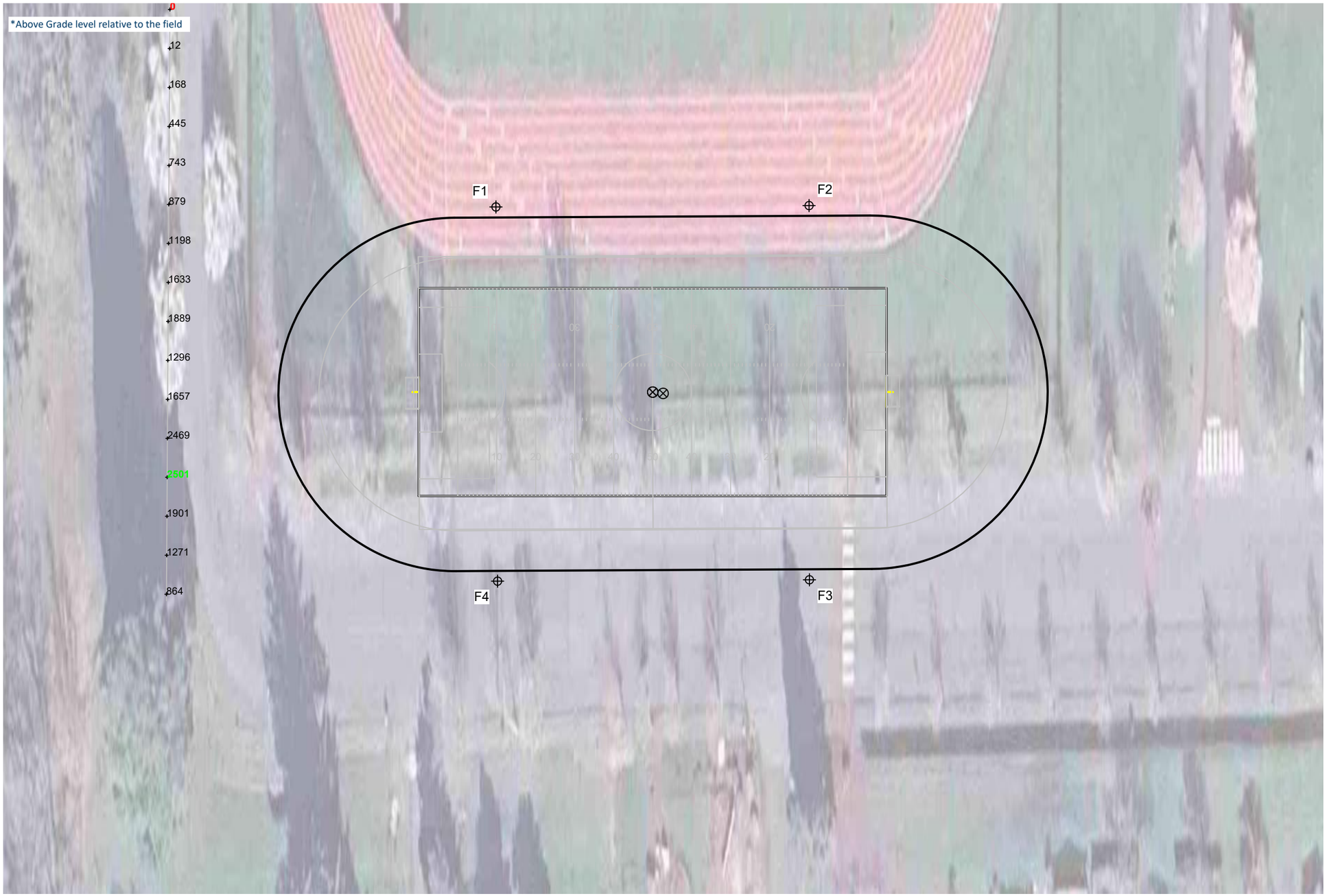
Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |




## Grid Summary

| | |
|---|---|
| **Name:** | **Mountain V Lane Spill @ 5ft.** |
| Spacing: | 30.0' |
| Height: | 5.0' above grade |

## Illumination Summary

| | INITIAL CANDELA (PER FIXTURE) |
|---|---|
| | Entire Grid |
| **Scan Average:** | **902.6657** |
| Maximum: | 2500.81 |
| Minimum: | 0.01 |
| CU: | 0.00 |
| No. of Points: | 21 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

We Make It Happen.

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

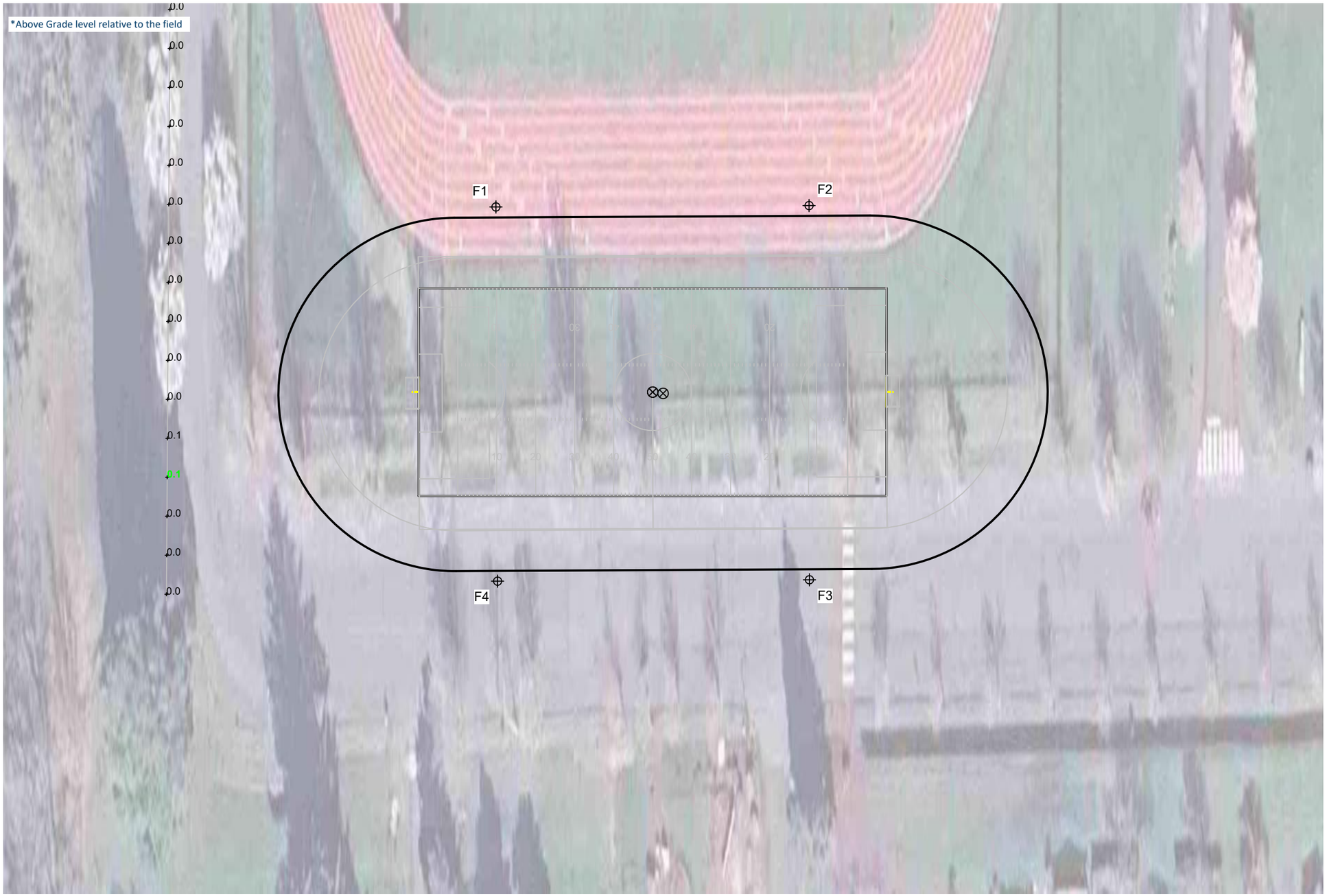
# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |

*Above Grade level relative to the field




## Grid Summary

| | |
|---|---|
| **Name:** | **Mountain V Lane Spill @ 5ft.** |
| Spacing: | 30.0' |
| Height: | 5.0' above grade |

## Illumination Summary

| | INITIAL MAX VERTICAL FOOTCANDLES |
|---|---|
| | Entire Grid |
| **Scan Average:** | **0.0203** |
| Maximum: | 0.05 |
| Minimum: | 0.00 |
| CU: | 0.00 |
| No. of Points: | 21 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

# Neil Armstrong Middle School FB & Track

**Forest Grove, OR**

## Equipment Layout

**INCLUDES:**
· Football
· Soccer
· Track

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

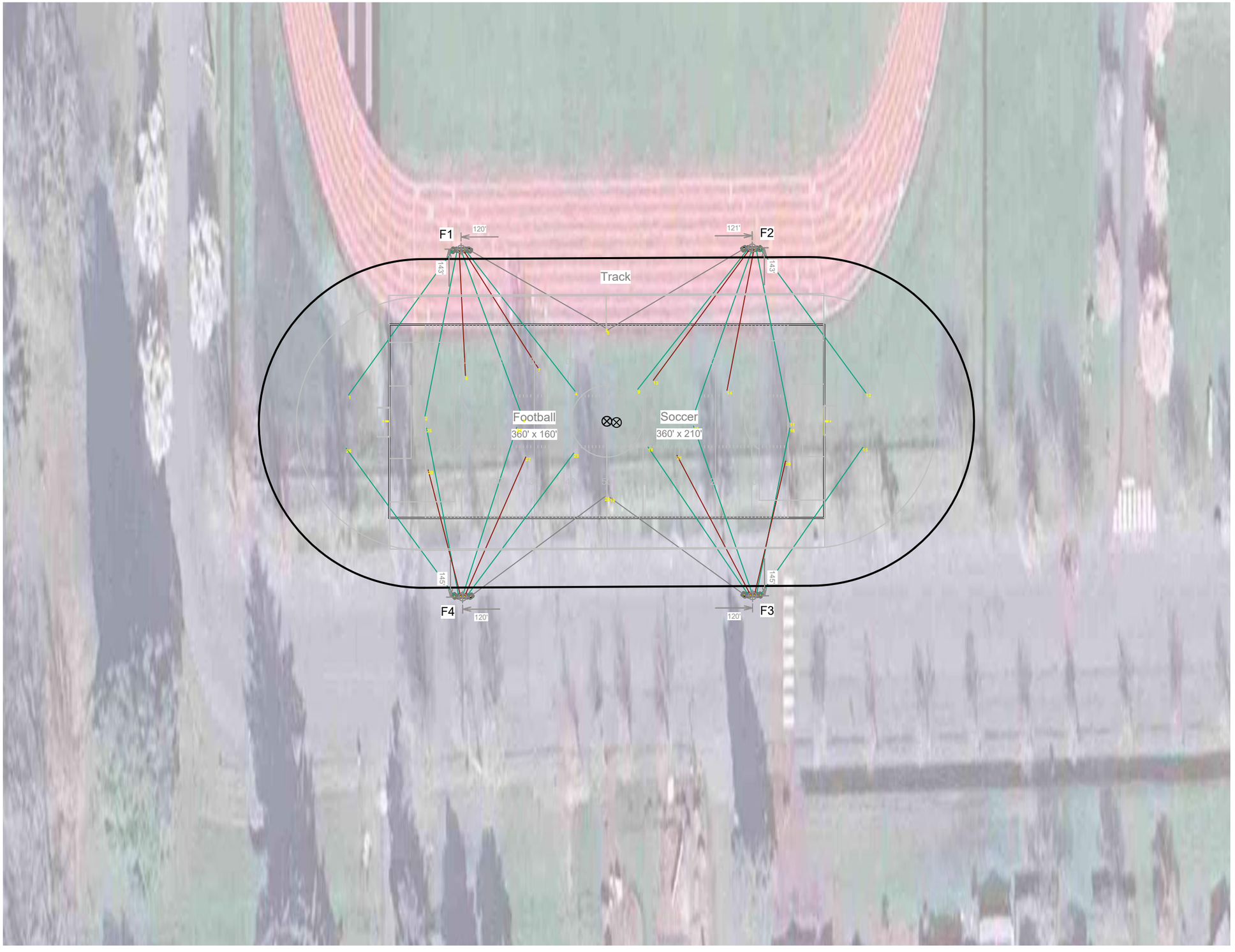
**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | |
|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE |
| 4 | F1-F4 | 70' | - | 70'<br>15.5' | TLC-LED-1500<br>TLC-BT-575 | 5<br>2 |
| 4 | Totals | | | | | 28 |

## Single Luminaire Amperage Draw Chart

| Driver Specifications (.90 min power factor) | Line Amperage Per Luminaire (max draw) | | | | | | |
|---|---|---|---|---|---|---|---|
| Single Phase Voltage | 208 (60) | 220 (60) | 240 (60) | 277 (60) | 347 (60) | 380 (60) | 480 (60) |
| TLC-LED-1500 | 8.4 | 7.9 | 7.3 | 6.3 | 5.0 | 4.6 | 3.6 |
| TLC-BT-575 | 3.3 | 3.2 | 2.9 | 2.5 | 2.0 | 1.8 | 1.5 |




SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

# **Exhibit B:** City Application Form

FOREST GROVE OREGON

*A place where families and businesses thrive.*

# Land Use Application

**OFFICIAL USE ONLY**

Planning File Number: _____ Internal File Number: _____

Received By: _____ Date Received: _____ Receipt No.: _____

Application Fee: _____ Deposit – Rate per Hour: _____

**APPLICATION TYPE:**

- ☐ Site Plan Approval
- ☑ Conditional Use
- ☐ Variance
- ☐ Appeal of _____

Establish a Planned Development:
☐ PRD ☐ CPD ☐ PID

Comprehensive Plan Amendment:
☐ Text ☐ Map

Zoning Ordinance Amendment:
☐ Text ☐ Map

Land Division:
☐ Subdivision ☐ Partition
☐ Tentative Plat ☐ Final Plat

☐ Lot Line Adjustment

Other: _____

**Applicant's Consultant:**
Melissa Slotemaker, AICP
AKS Engineering & Forestry, LLC
12965 SW Herman Road, Ste. 10
Tualatin, OR 97062
(503)-563-6151
slotemakerm@aks-eng.com

**APPLICANT INFORMATION:**

Name: Forest Grove School District

Mailing Address: 1728 Main Street, Forest Grove, OR 97116

Phone: Please contact Applicant's Consultant. Email: Please contact Applicant's Consultant.

**PROPERTY OWNER INFORMATION:**

Name: Forest Grove School District

Mailing Address: 1728 Main Street, Forest Grove, OR 97116

Phone: Please contact Applicant's Consultant. Email: Please contact Applicant's Consultant.

**SUBJECT SITE(S) INFORMATION:**

Property Address: 1777 Mountain View Lane, Forest Grove, OR 97116

Map & Tax Lot Numbers(s): 1S305AD, Tax Lot 1100

Current Zoning: Institutional (INST) Total Size of Site: ±4.31 acres

Existing Use: Athletic field and track for Neil Armstrong Middle School

Proposed Use/Project Summary: Major Modification to CUP for new field lighting

*Continued*

In order to expedite and complete the processing of this application, the Planning Division requires that all pertinent material required for review be submitted at the time application is made. If the application is found to be incomplete, review and processing of the request will not begin until the application is made complete. The submittal requirements relative to this application may be obtained from the specific sections of the Zoning or Land Division Ordinances pertaining to this application and from Planning Division staff. Pre- application conferences with Planning Division staff are encouraged. If there are any questions as to submittal requirements, contact the Planning Division prior to formal submission of the application. In submitting this application, the applicant should be prepared to give evidence and information which will justify the request. *The filing fee must be paid at the time of submission. This fee in no way assures approval and is non- refundable.*

I certify that the statements made in this application are complete and true to the best of my knowledge. I understand that any false statements may result in denial of this application.

Applicants Signature Alean Cluts Date Mar 26, 2025

Property Owner's Signature Alean Cluts Date Mar 26, 2025

# 9897-05 NAMS Lighting LUA unsigned

Final Audit Report 2025-03-26

| | |
|---|---|
| Created: | 2025-03-17 |
| By: | Mary Dolan (mdolan@cornerstonemgi.com) |
| Status: | Signed |
| Transaction ID: | CBJCHBCAABAAYs6PJmFgSnWKqSnZBSLXyRcmj2sY8E0B |

## "9897-05 NAMS Lighting LUA unsigned" History

Document created by Mary Dolan (mdolan@cornerstonemgi.com)
2025-03-17 - 9:20:59 PM GMT- IP address: 97.115.82.152

Document emailed to Ilean Clute (iclute@fgsd.k12.or.us) for signature
2025-03-17 - 9:21:35 PM GMT

Email viewed by Ilean Clute (iclute@fgsd.k12.or.us)
2025-03-18 - 5:43:16 AM GMT- IP address: 104.28.116.89

Email viewed by Ilean Clute (iclute@fgsd.k12.or.us)
2025-03-23 - 8:04:42 AM GMT- IP address: 104.28.116.107

Email viewed by Ilean Clute (iclute@fgsd.k12.or.us)
2025-03-25 - 5:35:49 AM GMT- IP address: 104.28.116.107

Document e-signed by Ilean Clute (iclute@fgsd.k12.or.us)
Signature Date: 2025-03-26 - 9:39:33 PM GMT - Time Source: server- IP address: 66.154.186.132

Agreement completed.
2025-03-26 - 9:39:33 PM GMT

# **Exhibit C:** Property Ownership Information

FIRST AMERICAN TITLE

# Property Research Report

**SUBJECT PROPERTY**
4445 Heather St
**Parcel #:** R413225
**Map & Taxlot #:** 1S305AD01100
**County:** Washington

**OWNER**
Forest Grove School Dist #15

**DATE PREPARED**
Date: 03/24/2025

**PREPARED BY**
gparilla@firstam.com

First American Title

Customer Service Department
503.219.8746
cs.oregon@firstam.com

©2018 First American Financial Corporation and/or its affiliates.
All rights reserved. | NYSE: FAF | 39203000418

IMPORTANT – READ CAREFULLY: THIS REPORT IS NOT AN INSURED PRODUCT OR SERVICE OR A REPRESENTATION OF THE CONDITION OF TITLE TO REAL PROPERTY. IT IS NOT AN ABSTRACT, LEGAL OPINION, OPINION OF TITLE, TITLE INSURANCE COMMITMENT OR PRELIMINARY REPORT, OR ANY FORM OF TITLE INSURANCE OR GUARANTY. THIS REPORT IS ISSUED EXCLUSIVELY FOR THE BENEFIT OF THE APPLICANT THEREFOR, AND MAY NOT BE USED OR RELIED UPON BY ANY OTHER PERSON. THIS REPORT MAY NOT BE REPRODUCED IN ANY MANNER WITHOUT FIRST AMERICAN'S PRIOR WRITTEN CONSENT. FIRST AMERICAN DOES NOT REPRESENT OR WARRANT THAT THE INFORMATION HEREIN IS COMPLETE OR FREE FROM ERROR, AND THE INFORMATION HEREIN IS PROVIDED WITHOUT ANY WARRANTIES OF ANY KIND, AS-IS, AND WITH ALL FAULTS. AS A MATERIAL PART OF THE CONSIDERATION GIVEN IN EXCHANGE FOR THE ISSUANCE OF THIS REPORT, RECIPIENT AGREES THAT FIRST AMERICAN'S SOLE LIABILITY FOR ANY LOSS OR DAMAGE CAUSED BY AN ERROR OR OMISSION DUE TO INACCURATE INFORMATION OR NEGLIGENCE IN PREPARING THIS REPORT SHALL BE LIMITED TO THE FEE CHARGED FOR THE REPORT, IF ANY. RECIPIENT ACCEPTS THIS REPORT WITH THIS LIMITATION AND AGREES THAT FIRST AMERICAN WOULD NOT HAVE ISSUED THIS REPORT BUT FOR THE LIMITATION OF LIABILITY DESCRIBED ABOVE. FIRST AMERICAN MAKES NO REPRESENTATION OR WARRANTY AS TO THE LEGALITY OR PROPRIETY OF RECIPIENT'S USE OF THE INFORMATION HEREIN.

First American Title

Customer Service Department
503.219.8746
cs.oregon@firstam.com
Date: 03/24/2025

## OWNERSHIP INFORMATION

Owner: Forest Grove School Dist #15
CoOwner:
Site: 4445 Heather St Forest Grove OR 97116
Mail: 1728 Main St Forest Grove OR 97116

Parcel #: R413225
Ref Parcel #: 1S305AD01100
TRS: 01S / 03W / 05 / NE
County: Washington

## PROPERTY DESCRIPTION

Map Grid: 592-C5
Census Tract: 032903 Block: 2034
Neighborhood: CPO12FG - Cpo 12 Forest Grove
School Dist: 15 Forest Grove
Impr Type:
Subdiv/Plat:
Land Use: 9200 - Exempt Public School Dist Vacant
Std Land Use: 9203 - Public School
Zoning: Forest Grove-INST - Institutional
Lat/Lon: 45.51450423 / -123.07469104
Watershed: Scoggins Creek-Tualatin River
Legal: ACRES 4.31

## ASSESSMENT AND TAXATION

Market Land: $1,776,810.00
Market Impr: $0.00
Market Total: $1,776,810.00 (2024)
% Improved: 0.00%
Assessed Total: $0.00 (2024)
Levy Code: 15.19
Tax: $0.00 (2024)
Millage Rate: 18.8917
Exemption: $1,776,810.00
Exemption Type:

## PROPERTY CHARACTERISTICS

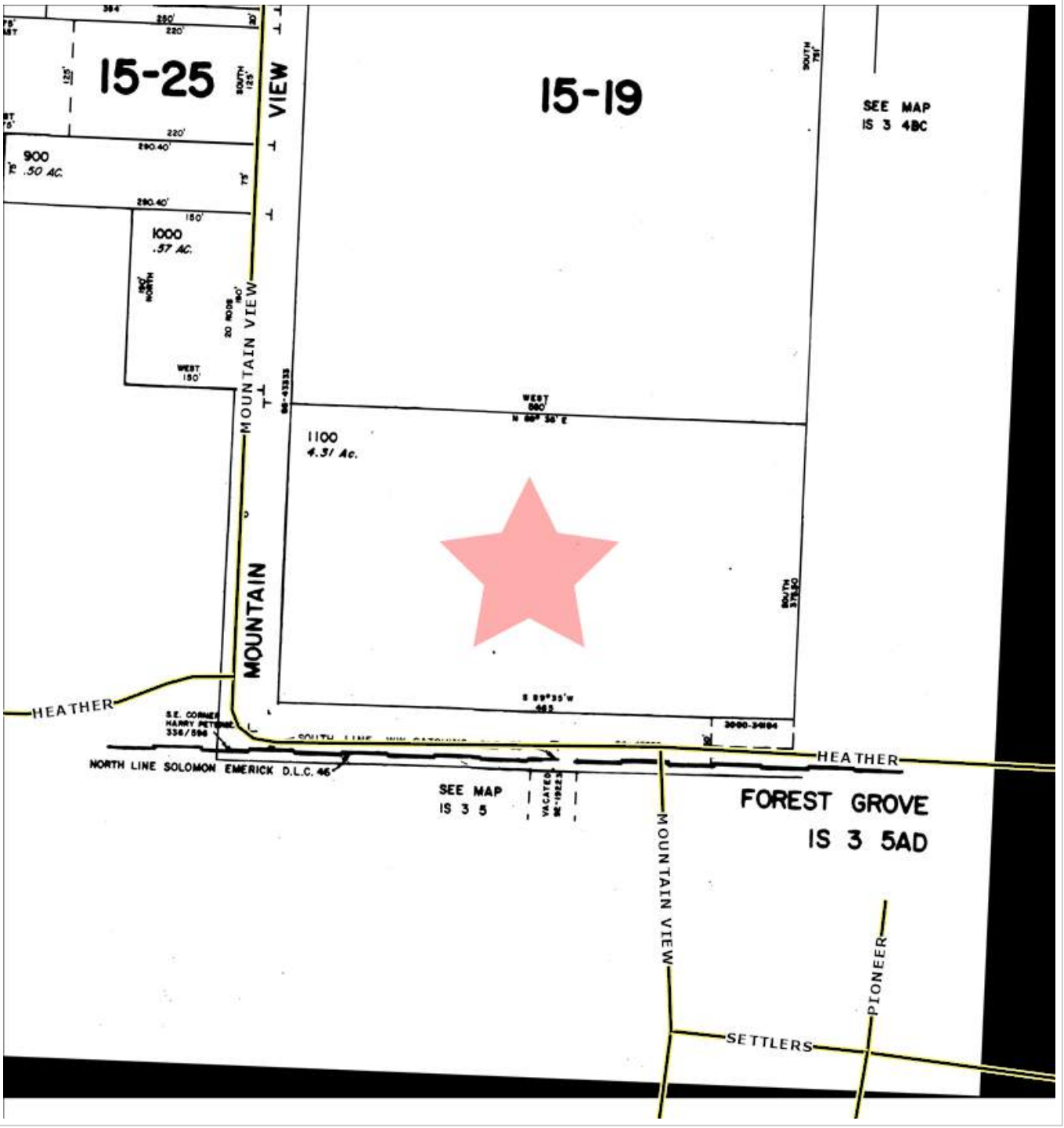
| | | |
|---|---|---|
| Bedrooms: | Total SqFt: | Year Built: |
| Baths, Total: | First Floor: | Eff Year Built: |
| Baths, Full: | Second Floor: | Lot Size Ac: 4.31 Acres |
| Baths, Half: | Basement Fin: | Lot Size SF: 187,744 SqFt |
| Total Units: | Basement Unfin: | Lot Width: |
| # Stories: | Basement Total: | Lot Depth: |
| # Fireplaces: | Attic Fin: | Roof Material: |
| Cooling: | Attic Unfin: | Roof Shape: |
| Heating: | Attic Total: | Ext Walls: |
| Building Style: | Garage: | Const Type: |

## SALES AND LOAN INFORMATION

| Owner | Date | Doc # | Sale Price | Deed Type | Loan Amt | Loan Type |
|---|---|---|---|---|---|---|

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.

**Assessor Map**




First American Title

**Parcel ID: R413225**

**Site Address: 4445 Heather St**

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.

**Aerial Map**




First American Title

**Parcel ID: R413225**

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.

3699

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, That LLOYD G. DUYCK and GERALDINE M. DUYCK, husband and wife, hereinafter called grantor, for the consideration hereinafter stated, does hereby grant, bargain, sell and convey unto Washington County School District No. 15, Forest Grove, Oregon, hereinafter called grantee, and grantee's successors and assigns all of that certain real property with the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining, situated in the County of Washington, State of Oregon, described as follows, to-wit:

The following described land in the West one-half of the Northwest quarter of Section 4, and the East one-half of the Northeast quarter of Section 5, Township 1 South, Range 3 West, W. M., Washington County, Oregon:

Beginning at an iron pipe at the southeast corner of the William W. Catching D.L.C. #38, in Sections 4 and 5, Township 1 South of Range 3 West of the W. M.; thence North on the east line of said claim 1862.0 feet to the south line of the Southern Pacific Railroad right of way; thence following the south line of said right of way in a southwesterly direction on a 43 minute curve to the left 767.0 feet; thence South 1664.0 feet to the south line of William W. Catching D.L.C.; thence north 89° 35' East 739.0 feet to the place of beginning.

ALSO: Perpetual rights of way described as follows: Beginning at the southwest corner of Lot 11, Cornelius Environs; thence north 10° 58' East 210.5 feet, more or less, to a point on the south line of the Southern Pacific right of way 40.0 feet east of the west line of said Lot 11, being also the east line of the 30 acre tract hereby described; thence following a 40 feet east of and parallel to, the west line of lot 10, Cornelius Environs, north 389.2 feet, more or less, to the center of the Baseline Road; thence west of said center line 40.0 feet to the northwest corner of said lot 10; thence south 596.0 feet to the place of beginning.

ALSO: Beginning at a post at the southwest corner of J. H. Hanson's land on the south line of the William W. Catching D.L.C. #38, in Sections 4 and 5, Township 1 South of Range 3 West of the W. M., said post being south 89° 35' West 739.0 feet from the southeast corner of said claim; thence south 89° 35' West 250 feet to the center of the County Road #71; thence north 20 feet; thence north 89° 35' East 250 feet to the west line of J. H. Hanson's land; thence South on said line 20 feet to the place of beginning.

ALSO: Beginning at an iron on the south line of the William Catching D. L. C. # 38, in Sections 4 and 5, Township 1 South, Range 3 West, W. M., in Washington County, Oregon, and distant south 89° 35' west 1319 feet from the southeast corner thereof; thence north in the center of the County road 375.5 feet; thence north 89° 35' East 580 feet to a post; thence South 375.5 feet to a post the south line of said D. L. C.; thence on said south line south 89° 35' West 580 feet to the place of beginning. EXCEPTING: Beginning at a post at the southwest corner of J. H. Hanson's land



BOOK 736 PAGE 598

on the south line of the William Catching D.L.C. No. 38, in Sections 4 and 5, Township 1 South, Range 3 West of the W. M., in Washington County, Oregon; said post being south 89° 35' West 739 feet from the southeast corner of said claim; thence south 89° 35' west 250 feet to the center of the county road #71; thence north 20 feet; thence north 89° 35' east 250 feet to the west line of J. H. Hanson's land; thence South on said line 20 feet to the place of beginning.

ALSO: Commencing at the southeast corner of the D. L. C. of William Catching and wife in Section 4, Township 1 South of Range 3 West of the W. M. in Washington County, Oregon; and running thence north on the east line of said claim 28.20 chains to a point south 12° 40' east 30 feet from center line of main tract of O. & C. R. R.; thence westerly on a curve (whose center is situated south 12° 40' east 129.77 chains) parallel with the center line of said road 20.90 chains to center of 30 foot road known as the Geiger road; thence south 333.5 feet to the point of beginning of the tract herein conveyed; thence east 580 feet; thence south 751 feet; thence west 580 feet; thence north 751 feet to the place of beginning, being part of the D.L.C. of said William Catching and wife.

To Have and to Hold the same unto the said grantee and grantee's successors and assigns forever.

And the grantor hereby covenants to and with the said grantee and grantee's successors and assigns that said real property is free from incumbrances created or suffered thereon by grantor and that grantor will warrant and defend the same and every part and parcel thereof against the lawful claims and demands of all persons claiming by, through, or under the grantor.

The true and actual consideration paid for this transfer, stated in terms of dollars, is $80,000.00.

In construing this deed the singular includes the plural as the circumstances may require.

Witness grantor's hand this 26 day of February, 1969.

Lloyd G. Duyck

Geraldine M. Duyck

STATE OF OREGON )
) ss.
County of Washington )

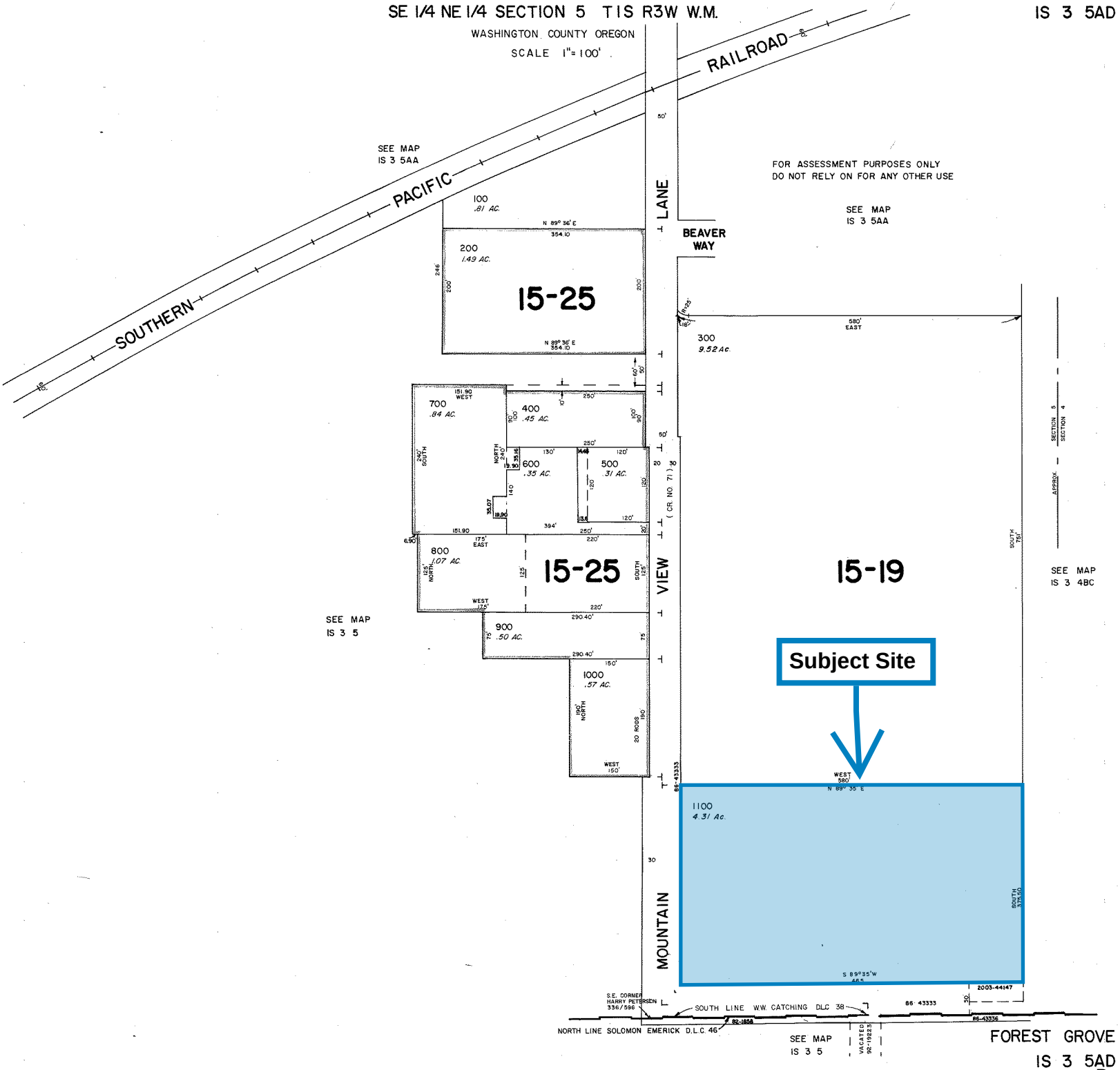
Personally appeared the above named LLOYD G. DUYCK and GERALDINE M. DUYCK, husband and wife, and acknowledged the foregoing instrument to be their voluntary act and deed.

Before me: Thomas J. Moore
Notary Public for Oregon
My commission expires: 9-21-69

NOTARY PUBLIC STATE OF OREGON

Filed for record March 17, 1969 at 2:11 P.M.
ROGER THOMSSEN, Director of Records & Elections
By J. Randel Deputy

# **Exhibit D:** Washington County Assessor's Map


SE 1/4 NE 1/4 SECTION 5 T1S R3W W.M.
WASHINGTON COUNTY OREGON
SCALE 1"= 100'
IS 3 5AD
RAILROAD
SOUTHERN PACIFIC
SEE MAP IS 3 5AA
FOR ASSESSMENT PURPOSES ONLY
DO NOT RELY ON FOR ANY OTHER USE
SEE MAP IS 3 5AA
LANE
BEAVER WAY
100 .81 AC.
200 1.49 AC.
15-25
300 9.52 Ac.
700 .84 AC.
400 .45 AC.
600 .35 AC.
500 .31 AC.
800 .07 AC.
15-25
900 .50 AC.
1000 .57 AC.
VIEW
(CR. NO. 711)
15-19
SEE MAP IS 3 4BC
SEE MAP IS 3 5
Subject Site
1100 4.31 Ac.
MOUNTAIN
S.E. CORNER HARRY PETERSEN 336/596
SOUTH LINE WW CATCHING DLC 38
NORTH LINE SOLOMON EMERICK D.L.C. 46
SEE MAP IS 3 5
VACATED 92-19225
FOREST GROVE
IS 3 5AD

# **Exhibit E:** Clean Water Services Service Provider Letter

Clean Water Services

# SENSITIVE AREA PRE-SCREENING SITE ASSESSMENT

**Clean Water Services File Number** 25-000870

1. **Jurisdiction:** Washington County

2. **Property Information** (example: 1S234AB01400)
   Tax lot ID(s): Map 1S 3 5AD Tax Lot 1100

   ***OR* Site Address:** Northeast of the intersection of Mountain View Lane and Heather Street
   City, State, Zip: Forest Grove,OR,97116
   Nearest cross street:

3. **Owner Information**
   Name:
   Company: Forest Grove School District
   Address: 1728 Main Street
   City, State, Zip: Forest Grove,OR,97116
   Phone/fax:
   Email:

4. **Development Activity** (check **all** that apply)
   - ☐ Addition to single family residence (rooms, deck, garage)
   - ☐ Lot line adjustment
   - ☐ Minor land partition
   - ☐ Residential condominium
   - ☐ Commercial condominium
   - ☐ Residential subdivision
   - ☐ Commercial subdivision
   - ☐ Single lot commercial
   - ☐ Multi lot commercial

   Other: New field lighting for existing athletic field.

4. **Applicant Information**
   Name: Sean Vermilya
   Company: AKS Engineering & Forestry, LLC
   Address: 12965 SW Herman Road, Ste. 100
   City, State, Zip: Tualatin,OR,97062
   Phone/fax: 503-563-6151
   Email: vermilyas@aks-eng.com

6. **Will the project involve any off-site work?** ☐ Yes ☒ No ☐ Unknown
   Location and description of off-site work:

7. **Additional comments or information that may be needed to understand your project:**

**This application does NOT replace Grading and Erosion Control Permits, Connection Permits, Building Permits, Site Development Permits, DEQ 1200-C Permit or other permits as issued by the Department of Environmental Quality, Department of State Lands and/or Department of the Army COE. All required permits and approvals must be obtained and completed under applicable local, state, and federal law.**

By signing this form, the Owner or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site. I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Print/type name: Sean Vermilya
Print/type title: Land Use Planner, Owner's Consultant
Signature: ONLINE SUBMITTAL
Date: 3/24/2025

## FOR DISTRICT USE ONLY

- ☐ Sensitive areas potentially exist on site or within 200' of the site. **THE APPLICANT MUST PERFORM A SITE ASSESSMENT PRIOR TO ISSUANCE OF A SERVICE PROVIDER LETTER.** If Sensitive Areas exist on the site or within 200 feet on adjacent properties, a Natural Resources Assessment Report may also be required.
- ☐ Based on review of the submitted materials and best available information sensitive areas do not appear to exist on site or within 200' of the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider Letter as required by Resolution and Order 19-5, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, State and federal law.
- ■ Based on review of the submitted materials and best available information the above referenced project will not significantly impact the existing or potentially sensitive area(s) found near the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect additional water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider Letter as required by Resolution and Order 19-5, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, state and federal law.
- ■ **THIS SERVICE PROVIDER LETTER IS NOT VALID UNLESS** 1 **CWS APPROVED SITE PLAN(S) ARE ATTACHED.**
- ☐ The proposed activity does not meet the definition of development or the lot was platted after 9/9/95 ORS 92.040(2). **NO SITE ASSESSMENT OR SERVICE PROVIDER LETTER IS REQUIRED.**

Reviewed by: Chealsey Rossbrook
Date: 3/27/2025

Once complete, email to: **SPLReview@cleanwaterservices.org** • Fax: **(503) 681-4439**
**OR** mail to: SPL Review, Clean Water Services, 2550 SW Hillsboro Highway, Hillsboro, Oregon 97123

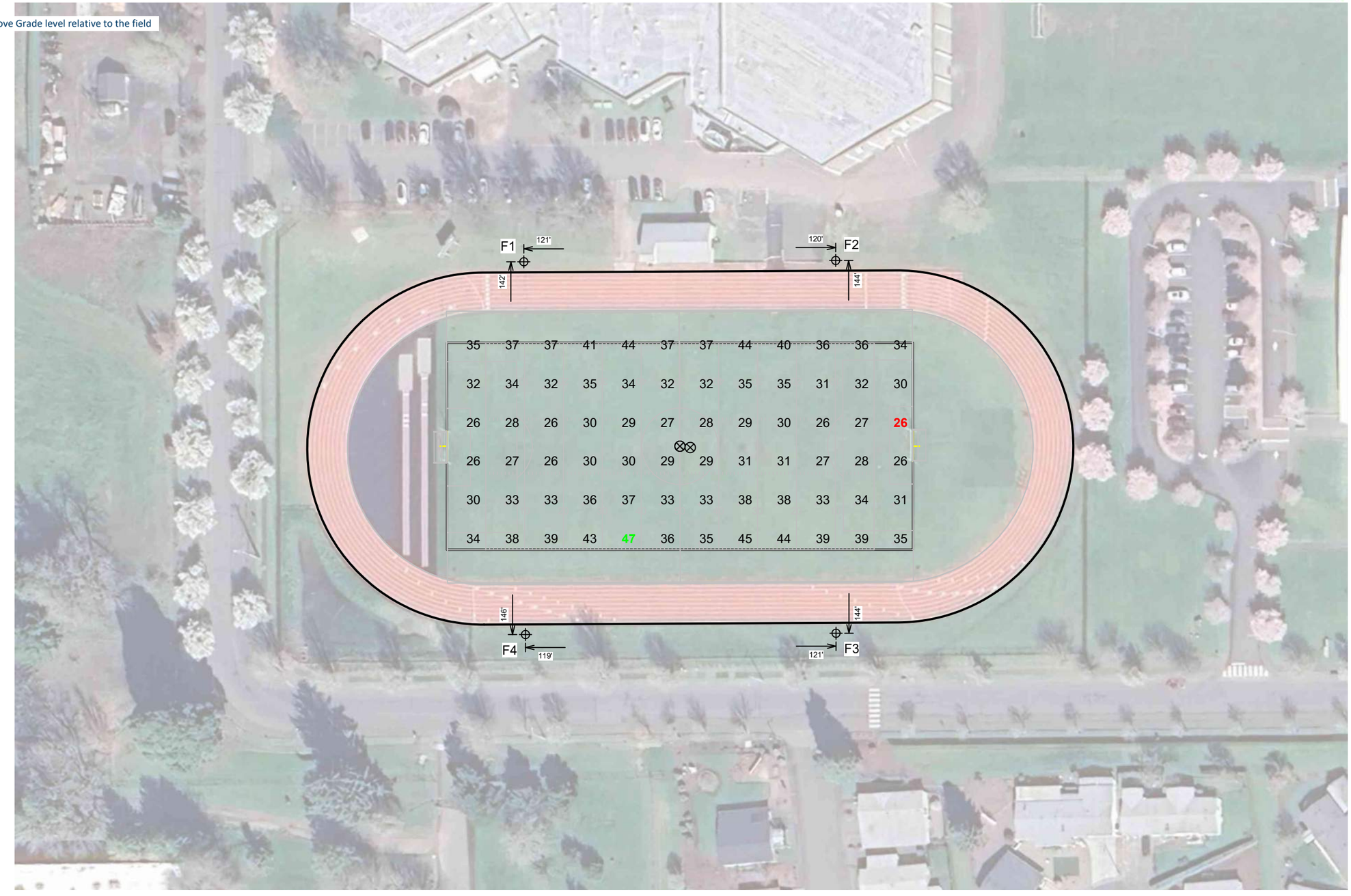
Revised 2/2020

## Equipment List For Areas Shown

| Pole | | | | Luminaires | | | | |
|---|---|---|---|---|---|---|---|---|
| QTY | LOCATION | SIZE | GRADE ELEVATION | ABOVE GRADE LEVEL | LUMINAIRE TYPE | QTY/POLE | THIS GRID | OTHER GRIDS |
| 4 | F1-F4 | 70' | - | 70' | TLC-LED-1500 | 5 | 5 | 0 |
| | | | | 15.5' | TLC-BT-575 | 2 | 2 | 0 |
| 4 | Totals | | | | | 28 | 28 | 0 |

*Above Grade level relative to the field

Approved by: Chealsey Rosebrook
Date 3/27/2025
Attachment 1 of 1
Clean Water Services




# Neil Armstrong Middle School FB & Track

Forest Grove, OR

## Grid Summary

| | |
|---|---|
| Name: | Football |
| Size: | 360' x 160' |
| Spacing: | 30.0' x 30.0' |
| Height: | 3.0' above grade |

## Illumination Summary

| | MAINTAINED HORIZONTAL FOOTCANDLES |
|---|---|
| | Entire Grid |
| **Guaranteed Average:** | **30** |
| Scan Average: | 33.44 |
| Maximum: | 47 |
| Minimum: | 26 |
| Avg/Min: | 1.30 |
| **Guaranteed Max/Min:** | **2.5** |
| Max/Min: | 1.81 |
| UG (adjacent pts): | 1.30 |
| CU: | 0.53 |
| No. of Points: | 72 |
| **LUMINAIRE INFORMATION** | |
| Applied Circuits: | A |
| **No. of Luminaires:** | **28** |
| Total Load: | 32.80 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

ENGINEERED DESIGN By: E.Fox • File #239562B • 10-Mar-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Musco Lighting — We Make It Happen.

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2025 Musco Sports Lighting, LLC.

# **Exhibit F:** Documentation of Prior Land Use Applications

forest grove

# NOTICE OF A DECISION

| | |
|---|---|
| **Applicant:** | Mahlum Architects (representing Forest Grove School District 15) |
| **Location:** | Neil Armstrong School site (Washington County tax lots 1S3 4BB-600 and 700; and 1S3 5AD-1100) |
| **Request:** | Conditional Use Permits for a new proposed P.A.C.E. facility building, and a new K-4 elementary school. |
| **File Numbers:** | CU-01-02 and CU-01-03 |
| **Date:** | November 26, 2001 |

On November 19, 2001, the Forest Grove Planning Commission approved both of the proposed conditional uses referenced above. The findings in support of their decisions and the conditions attached to each are enclosed in the attached orders.

These decisions are final unless appealed to the City Council. Should you or any other affected party wish to appeal either decision to the City Council, an appeal must be filed within twenty-one (21) days of the date of this notice. Appeals must be filed in writing, must state specifically how the decision conflicts with the purposes, intents, and provisions of the Zoning Ordinance or other applicable ordinances, and be accompanied by a $250 fee.

Please contact Associate Planner James Reitz at (503) 992-3233 if you have any questions.

CITY OF FOREST GROVE P.O. Box 326 Forest Grove, Oregon 97116 (503) 359-3200 FAX (503) 359-3207

## Planning Commission Findings and Decision Number 01-05 to Approve Conditional Use Permit CU-01-03 for the K-4 Elementary School at 4445 Heather Street

**WHEREAS,** Mahlum Architects, representing Forest Grove School District 15, filed for a conditional use permit on September 6, 2001, for a 5,051-square-foot five-classroom building; and

**WHEREAS,** notice of this request was mailed to property owners and residents within 300 feet of the subject site on October 31, 2001, as required by Zoning Ordinance Section 9.915. Notice was also published in the *News Times* on November 14, 2001, as required by Zoning Ordinance Section 9.915. No written comments were received in response to these notices; and

**WHEREAS,** the Planning Commission held the duly-noticed public hearing on the proposed conditional use permit on November 19, 2001.

The City of Forest Grove Planning Commission does hereby approve of the conditional use permit to allow for the K-4 elementary school, making the following specific findings in support of this decision:

(A) That the proposed project will comply with City parking requirements by providing 53 parking spaces. Zoning Ordinance Section 9.823 *Parking Requirements* stipulates a minimum of 2.0 and maximum of 3.5 parking spaces per classroom, for sites within Parking Zone B (as defined by Zoning Ordinance Section 9.821 *Off-Street Parking*). With 16 classrooms, the proposal must have a minimum of 32 spaces and a maximum of 56 spaces.

(B) That the west driveway serving the staff car park and bus loading area is located too close to the west driveway serving the visitor car park, and must be relocated to provide at least 105 feet of separation (curb-to-curb) as per Zoning Ordinance Section 9.833 *Widths and Locations of Driveways and Curb Cuts.*

(C) That the application meets the conditional use permit requirements as follows:

1. All city facilities and services currently serving the site are or can be made to comply with relevant City standards. The proposed school isn't anticipated to substantially change the demand on those services, and capacity is anticipated to adequately serve the facility as modified by the proposal.
2. The proposal will provide landscaping where none currently exists, to improve the visual impact of the school on adjacent uses. Outdoor open space will be improved with two new ball fields, which can be accessed via additional pedestrian facilities.
3. No public nuisance is expected to be created, with the possible exception of glare from ball field lighting (if any), and noise. If ball field lighting is installed, off-site glare can be mitigated through the installation of cut-off shields. Any noise impacts from the students is not expected to be significant off-site, due to the distance between the school's facilities and the adjacent residences. While there will be an increase in impervious surface, the newly generated runoff will be routed through a CWS-standard water quality facility. In summary, conditions that may be injurious to the public's health, safety, and welfare are not anticipated.
4. To ensure compliance with all of the applicable provisions of the Zoning Ordinance, the Planning Commission hereby imposes the following conditions of approval:

   A. An all-weather pedestrian path at least five feet wide shall be provided through the site from Heather Street to Tract "B" of Tarrybrooke No. 2.
   B. An all-weather pedestrian path at least five feet wide shall be provided from the vicinity of the ball fields to connect with both parking areas, and the path recommended above.
   C. Exterior lighting, if any, shall be shielded to prevent extraneous light from entering the yards of the adjacent homes.

D. Public access driveways shall maintain a separation of at least 105 feet curb-to-curb, pursuant to Zoning Ordinance Section 9.833 *Widths and Locations of Driveways and Curb Cuts.*

E. Re-stripe the westbound left-turn lane at the Pacific Avenue/Mountain View Lane intersection to provide increased storage to accommodate vehicle queues during peak time periods.

F. Configure the visitor lot parking stalls with angled parking to help reinforce the one-way circulatory flow of traffic at the parent drop-off accesses.

G. Maintain landscaping and signing near all site-access driveways to provide adequate lines of sight for vehicles entering and exiting the school facilities.

M. Elena Uhing
M. ELENA UHING, Chair

11/21/01
Date

**CITY OF FOREST GROVE PLANNING DIVISION**
**STAFF REPORT AND RECOMMENDATION**

| | |
|---|---|
| **REPORT DATE:** | November 9, 2001 |
| **HEARING DATE:** | November 19, 2001 |
| **LAND USE REQUEST:** | Conditional Use Permit for a new 16-classroom K-4 elementary school. |
| **FILE NUMBER(S):** | CUP-01-03 |
| **FILE NAME(S):** | |
| **PROPERTY LOCATION:** | 4445 Heather Street (see attached location map). |
| **LEGAL DESCRIPTION:** | Washington County Tax Lots 1S3 4BB-600 & 1S3 5AD-1100) |
| **OWNER/APPLICANT(S):** | Applicant: Mahlum Architects, 1231 NW Hoyt Street, Suite 102, Portland, Oregon 97209<br>Property Owner: Forest Grove School District 15, 1728 Main Street, Forest Grove, Oregon 97116 |
| **COMPREHENSIVE PLAN MAP AND ZONING MAP DESIGNATIONS:** | Existing<br>Comprehensive Plan designation: Public/School<br>Zoning Map designation: Single-Family Residential (R-7).<br><br>Proposed<br>Comprehensive Plan designation: Same.<br>Zoning Map designation: Same. |
| **APPLICABLE STANDARDS AND CRITERIA:** | City of Forest Grove Zoning Ordinance:<br>- Section 9.620 et. seq. Single-Family Residential (R-7).<br>- Section 9.820 et. seq. Off-Street Parking and Loading.<br>- Section 9.830 et. seq. Access, Egress and Circulation.<br>- Section 9.855 Site Plan Approval.<br>- Section 9.870 et. seq. Conditional Use Provisions. |
| **REVIEWING STAFF:** | James Reitz, AICP, Associate Planner |
| **RECOMMENDATION:** | Staff recommends approval with conditions. |

## I. LAND USE HISTORY

Zoning Ordinance Section 9.622 *Conditional Uses Permitted* (in single-family residential zones) requires that "Schools—primary, elementary, junior high, senior high, college or university, private, parochial or public" undergo review by the Planning Commission. This project is the result of a bond measure approved by the voters in November 2000. Other projects will also be brought before the Commission for review, including the new P.A.C.E. facility proposed north of this project, and a new 5-6 school proposed for the Tom McCall site on Pacific Avenue.

Zoning Ordinance Section 9.873 *Consideration of a Conditional Use Permit* authorizes the Planning Commission to act on a request for a conditional use permit after holding a public hearing pursuant to Sections 9.915 *Notice of Public Hearings and Limited Land Use Decisions* and 9.916 *Procedure for Planning Commission Action at a Public Hearing.*

Public notice for this application was mailed to property owners and residents within 300 feet of the site on October 31, 2001, as required by Section 9.915. Notice of this request was also provided to the Plans Review Board, and published in the *News Times.*

Comments received from the Plans Review Board included conditions for fire protection, solid waste/recycling storage, and parking area lighting. These issues pertain to complying with various standard zoning and fire code requirements, and will be addressed through the building permit review process.

As of the writing of this report, no comments have been received from the public.

## I. PROJECT DESCRIPTION AND ANALYSIS

A. Description of Proposal: Approval of this application would permit the construction of a new, 16-classroom building of 50,180 square feet. In addition to the classrooms, the two-story building is proposed to have a gym, commons/lunchroom area, library, two computer labs, a music room, and offices. Two parking areas are proposed: one of 24 spaces for visitors, the other of 32 spaces for staff. Outdoor play areas on the north side of the building are proposed, as are two new ball fields.

Access to the site is proposed via Heather Street, which is presently under construction. When complete, Heather Street will be connected between Cornelius and Forest Grove.

B. Site Examination: The subject site totals 28.92 acres. The specific site of the proposed K-4 school is the extreme southeast corner of the site, adjacent to the Cornelius city limits and across Heather Street from the Homestead manufactured home park. It is flat, vacant field, maintained in part as an outdoor play area. The existing Neil Armstrong School is located on the western portion of the site, and takes access from Mountain View Lane. The P.A.C.E. facility is also proposed on the northeast portion of the site; a separate conditional use permit has been filed for that facility.

Existing Comprehensive Plan Designation and Zoning of Site and Area

Comprehensive Plan Designation: Public/School
Zoning Designation: R-7 Single-Family Residential

Surrounding Land Uses

| LOCATION | COMPREHENSIVE PLAN DESIGNATION | ZONE DISTRICT | LAND USE |
|---|---|---|---|
| North | Community Commercial (CC) | Community Commercial (CC) | Multi-Family, Vacant Field |
| South | Low-Density Residential-Standard (LDR-B) | Single-Family Residential (R-7) | Single-family residential (Homestead Manufactured Home Park PRD) |
| East | Medium Density Residential (MDR) (Cornelius) | Multi-Family Residential (A-2) (Cornelius) | Single and two-family residential (Cornelius) |
| West | General Industrial (GI) | General Industrial (GI) | Industrial (Merix) |

C. Site Design: The proposed site is located in the extreme southeast corner of the property, just east of the existing Neil Armstrong School track. The proposal consists of a 16-classroom building and related facilities, including outdoor and covered play areas, two car parks (parking lots), new ball fields, and a water quality facility that will serve this project and the proposed P.A.C.E. building (see Exhibit "A" page A2 *Proposed Architectural Site Plan*). The car parks are to be landscaped, and the east property line defined with a row of Katsura and Armstrong maple trees. Shrubs, grass, and other groundcover are proposed around the building and within the car parks. Zelkovas are to be installed as street trees along Heather Street (see Exhibit "A" pages L1A, L1B, and L1C *Landscape Plan*). All the proposed perimeter tree species are large: Katsuras have a height and spread of 40 feet, the Zelkovas have a height and spread of 50 and 40 feet, respectively, and the Armstrong maples have a height and spread of 45 feet and 15 feet, respectively. Staff finds that the proposed landscaping and proposed street trees meet or exceed the standards of Zoning Ordinance sections 9.826 *Landscaping Required* and 9.858 *General Landscaping Standards.*

The parent drop-off and visitor parking areas are proposed to be located between Heather Street and the building. The bus loading and staff parking areas are proposed to be located between the existing track and the building. The car park and drop-off areas appear to be at appropriate locations: public (parent) access is located adjacent to the front building entrance, which will allow students to enter the building directly from their parents' vehicles. The staff car park and bus loading areas are off to the west side of the building. This would allow for a separation of private vehicular and bus traffic, thereby minimizing potential conflicts between small and large vehicles. Students using buses also would have direct access to the building, from doors located on the west façade. The location of the staff car park would minimize conflict with drop-off traffic, and, as

staff would arrive prior to the start of the school day, there should also be no conflict with bus traffic.

Two new ball fields are proposed north of the building: a softball/baseball field, and a football/soccer field. The submitted plans do not indicate if these fields will be lighted for evening use. In the event they are to be lighted, the fixtures should be shielded to ensure that extraneous light does not disturb the adjacent residents. Staff has proposed a condition to require that the lights be shielded.

D. Architecture: The proposed two-story building will be 35 feet in height, in compliance with Zoning Ordinance Section 9.625 *Height of Buildings* (in the R-7 Zone). Proposed exterior finishes are concrete plaster, masonry veneer, metal panels, and metal roofing (see Exhibit "A" pages A5 and A6 *Exterior Elevations*). Windows are located on all elevations.

The proposed building would be located 124 feet north of Heather Street and120 feet west of the east property line. Property owned by the school district is located to both the north and west of the proposed building site. Minimum front and side yard setbacks in the R-7 Single-Family Residential zone are twenty feet and five feet respectively *(ZO Section 9.624 Setback and Lot Width Requirements)*. Staff finds that the proposed building location more than complies with minimum setback standards, and that the proposed architecture is appropriate since all required yard and height requirements are met.

E. Compatibility: The proposed facility will have about 50,000 square feet of floor area. The two-story sections of the building will be located along Heather Street, with windows facing the street. There will be no second-story windows facing the homes in Cornelius. Therefore, the privacy of those residents should not be compromised. While the south-facing second-story windows will allow views into the Homestead residential area, the privacy of those residents should not be compromised since the school building will be located more than 180 feet from those homes. The view to the south will also be obscured by a row of Zelkova street trees.

The gym and commons area (where students would regularly congregate) are to be located on the west side of the structure, more than 360 feet from the east property line. However, some residents may be affected by children using the outdoor play area and ball fields, located north of the building. The play area extends to within 65 feet of the east property line, and the proposed baseball field is approximately 40 feet west of the line (the existing ball fields are approximately 350 feet west of the east property line). While the site will be visually screened from the adjacent properties, the noise created during outdoor activities may still be noticeable. However, the use of those facilities before or after normal school hours (when nearby residents would most notice their use) is uncertain, and staff is therefore not suggesting a remedy.

With the conditions recommended above, staff concludes that impacts on adjacent properties will not be significant.

F. Density: Not applicable, as this is not a residential project.

G. Traffic and Circulation: According to the Institute of Transportation Engineers Trip Generation Manual (5th Edition) elementary schools generate an average of

10.72 trips per 1,000 square feet of gross floor area. According to ITE, "Elementary school students generally use school buses more than regular transit and are "dropped off" and "picked up" more than high school students, who are apt to walk longer distances, ride bicycles, or in some cases, drive to school. Sixty-six percent of the students at the sites surveyed are transported to school via school buses."

With 50,180 square feet, this project could be anticipated to generate 538 trips on the average weekday. Of these, 50% would be entering, and 50% would be exiting. For example, a parent dropping off a child in the morning would be one trip; that same parent leaving the site is a second trip. If the parent also picks up a child in the afternoon, two more trips have been tallied.

The site will take access from Heather Street, which is currently under construction as part of the City of Hillsboro water line extension project. Heather Street is a designated Collector street (as is Mountain View Lane in front of Neil Armstrong School), and upon completion will provide a connection between Forest Grove and Cornelius. The City of Cornelius has also designated its segment of Heather Street as a Collector. Forest Grove has defined a Collector street as one "which functions to conduct traffic between arterial streets, activity centers and neighborhoods, or which serves as a principal traffic carrier within a neighborhood, also providing access to abutting land" (Land Division Ordinance Section 9.102 *Definitions*). An elementary school would fall within the definition of an "activity center" so it is appropriate that the proposed school takes access from Heather Street.

As a portion of the Forest Grove School District extends into Cornelius, it can be anticipated that some bus, parent, and visitor traffic will originate in Cornelius and use this connection, rather than travel to the site (and to Neil Armstrong School) via Pacific Avenue and Mountain View Lane. This traffic split may in fact reduce the amount of traffic on Mountain View Lane and Pacific Avenue. Thus, because Heather Street is a designated Collector street designed to accommodate the traffic generated by activity centers, and because the traffic generated by the proposed school would have two travel routes available, the traffic is not anticipated to substantially adversely affect the existing and proposed street system.

Three driveways are proposed, two to serve the parent drop-off area and visitor parking, and one to serve the bus loading area and staff car park. Driveway cuts on collector streets are regulated by Zoning Ordinance Section 9.833(4) *Widths and Locations of Driveways and Curb Cuts*. In a 25-mph zone (the standard speed limit in residential areas), driveways must maintain a minimum separation (curb-to-curb) of 105 feet. As proposed, the staff car park driveway is 105 feet from its centerline to the centerline of the next driveway. Therefore, at least one driveway must be relocated in order to achieve a minimum separation of 105 feet. Staff has proposed a condition to address this issue.

A dirt path has been worn through the site, north of the proposed building site. Since this facility and the proposed P.A.C.E. facility will generate additional pedestrian traffic, staff is proposing a condition that the path be widened to at least five feet (standard sidewalk width), improved with an all-weather surface, and connected through from the P.A.C.E. facility to Heather Street.

In addition, it is likely that the ball fields will be used by area residents, either through formal team activities or otherwise. Pedestrian access to the ball fields from Heather Street and the two parking areas should also be provided, and staff has recommended a condition to do so.

H. Environmental Quality: There is no City record of any prominent environmental conditions. Storm water runoff will be treated via the water quality facility to be constructed as part of this project. Due to the installation of landscaping where there is none presently, air quality may be improved.

J. Parking: Fifty-six parking spaces are proposed: 21 for visitors, 3 accessible parking spaces, and 32 for staff. Zoning Ordinance Section 9.823 *Parking Requirements* requires a minimum of 2.0 parking spaces to a maximum of 3.5 parking spaces per classroom for K-8 schools. With sixteen classrooms, this school will require 32-to-56 parking spaces. As 56 spaces are proposed, the number of parking spaces complies with City standards.

K. Public Services: Please refer to Exhibit A pages C3 and C4 *Utility Plan*. Several of the utilities will be constructed to serve both this project and the proposed P.A.C.E. facility elsewhere on the site. Site utilities for both projects are to be installed concurrently. In addition, utilities are currently under construction in Heather Street. The Heather Street project will provide an additional connection between Forest Grove and Cornelius, and is projected to be completed in 2002.

Sanitary Sewer – City sanitary sewer facilities are available in Mountain View Lane, and in Heather Street west of the Homestead residential area. To serve this project, the applicant will be required to make a connection to the City of Forest Grove sanitary system. Capacity is adequate to serve the proposed use.

Water – City water facilities are available in Mountain View Lane, and are under construction in Heather Street. To serve this project and the proposed P.A.C.E. facility with adequate domestic supply and fire flow, the applicant will be installing an eight-inch line between Heather Street and Pacific Avenue. This water line may need to loop via S. First Street north of the railroad right-of-way; if so, the developer will be required to obtain engineering plan approvals from both the City of Forest Grove and the City of Cornelius. In addition, the developer shall be responsible for preparing an intergovernmental agreement for the purposes of installation, maintenance, and replacement of the waterline. Once the loop is completed, water supply will be adequate to serve the proposed use.

Storm Drainage – City storm drainage facilities are available in Mountain View Lane, and are under construction in Heather Street. Storm drainage will be provided to this facility and the new P.A.C.E. facility via a new, thirty-inch storm drain line to be constructed by the applicant. This line will connect with the storm line under construction as part of the Heather Street project, which is being built to City master plan specifications. Once installed, storm drainage will be adequate to serve the proposed use.

Electrical Service – Electrical supply is adequate to serve the proposed use.

Public School Systems – The purpose of both this application and the proposed P.A.C.E. facility elsewhere on the site is to provide additional public educational facilities, as per the Forest Grove School District master facilities plan.

Other Public Services -- Police, fire, and sanitation services are available and are adequate to serve the proposed use. Additional fire hydrants will be required on site as a result of this project, to comply with Uniform Fire Code standards.

## III. APPROVAL CRITERIA, FINDINGS AND ANALYSIS

Zoning Ordinance Section 9.873 *Consideration of Conditional Use Application* requires that the Commission find that the proposal complies with the following criteria:

**(1) That all public facilities serving the proposed use, including but not limited to sanitary sewers, water, streets, storm drains, electrical distribution, parks and public safety and schools are adequate, and meet current City standards;**

Applicant's Response: *Prior to the issuance of a building permit, the applicant shall construct sanitary sewer per the utility plans, to service the site, and in accordance with the City of Forest Grove and Clean Water Service standards. The applicant is proposing a water quality and detention pond in the east portion of the site. The facility has been designed in accordance with the City of Forest Grove and Clean Water Service standards. The water system has been designed to meet applicable Forest Grove Fire & Rescue, and City of Forest Grove standards. A full street extension of S. Heather Street will be constructed by other parties prior to the start of construction for the new school. Electrical distribution will be accommodated by providing a new transformer connected to power in the S. Heather Street right-of-way to be extended at the time of those street improvements.*

Staff Analysis and Findings: Based on the above analysis, the impact to public facilities and services will be negligible as the parcel is adequately served, once the Heather Street project is complete and the applicant constructs water, storm drainage, and sanitary facilities to serve this project and the proposed P.A.C.E. facility. Additional fire hydrants on-site will be required as a result of this project, to comply with Uniform Fire Code standards.

**(2) That the proposed use provides adequate open space, landscaping, and aesthetic design treatment to mitigate any possible adverse effect on said use on surrounding properties and uses;**

Applicant's Response: *As proposed, the new school provides extensive open space in the ball field and playground areas. The massing of the building is intended to be compatible with the existing Neil Armstrong Middle School on the site. Dense landscaping is provided at appropriate locations along adjacent properties, and the parking lot areas will be landscaped per City of Forest Grove Zoning Ordinance requirements. Adjacent properties include primarily single-family residential lots to the east of the site, as well as across S. Heather Street from the site. To provide a buffer between these adjacent properties, the new school building is set back more than 100 feet from both the residential properties at the east property line and the S. Heather Street right-of-way.*

Staff Analysis and Findings: The proposed building site is bounded on the north and west by additional school facilities, and on the south by Heather Street. The nearest homes are located to the east, in Cornelius. More than 120 feet will separate the building from the east property line. This area is to landscaped, including a row of trees along the property line to provide a visual separation.

Two new ball fields are proposed north of the building. No lighting has been indicated that would allow for evening use. Should outdoor lighting be proposed, it should be shielded so as not to illuminate the adjacent yards, and staff has recommended a condition to that effect. The row of trees will continue along the east property line, to the north property line at the railroad right-of-way. These trees will provide additional visual separation, and when leafed out, will obscure any ball field lighting.

To the south of the proposed site is a residential neighborhood. As the building will be located across the street from and more than 180 feet from the nearest home, it should have minimal effect on that neighborhood. A row of Zelkova street trees will provide additional, visual separation between the proposed school and the neighborhood.

(3) **That the proposed use will ensure that no land will be used for any purpose which creates or causes to be created any public nuisance, including but not limited to air, land, or water degradation, noise, glare, heat, vibration, or other conditions which may be injurious to public health, safety, and welfare;**

Applicant's Response: *The proposed design should not cause any local environmental problems. As proposed, typical sources of complaints at school sites, such as noise related to mechanical equipment or transformers or generators, are all located inside the building or within enclosures to mitigate these problems.*

Staff Analysis and Findings: No air, land, heat, noise, or vibration issues are anticipated as a result of the building. Glare from car park and ball field lighting may be a factor, but should be adequately mitigated by the proposed landscaping. As the proposed facilities are located well away from most adjacent uses, no conditions are anticipated to be created that would be injurious to public health, safety, or welfare.

(4) **That the proposed use will comply with the purpose of this section and with all of the applicable provisions of the Zoning Ordinance.**

Applicant's Response: *To the best of our knowledge, the design fully complies with all City of Forest Grove Zoning Ordinance requirements*

Staff Analysis and Findings: With the proposed conditions, this project will comply with all applicable provisions of the Zoning Ordinance.

## IV. ALTERNATIVES

The Planning Commission may approve as submitted, approve with conditions, continue deliberations to a date certain, or deny this request.

## V. RECOMMENDATION

Based on the information provided in the application and the findings above, staff recommends approval of the application for a conditional use permit for the proposed K-4 elementary school, with the following conditions:

1. An all-weather pedestrian path at least five feet wide shall be provided through the site from Heather Street to the P.A.C.E. facility.
2. An all-weather pedestrian path at least five feet wide shall be provided from the vicinity of the ball fields to connect with both parking areas, and the path recommended above.
3. Ball field lighting, if any, shall be shielded to prevent extraneous light from entering the yards of the adjacent homes.
4. Driveways shall maintain a separation of at least 105 feet curb-to-curb, pursuant to Zoning Ordinance Section 9.833 *Widths and Locations of Driveways and Curb Cuts.*

## VI. LIST OF EXHIBITS

The following exhibits were received, marked, and entered into the record as evidence for this application at the time this staff report was written. Exhibits received after the date of this report will be marked beginning with the next consecutive letter and will be entered into the record at the time the public hearing is opened, prior to oral testimony.

**Exhibit A** Conditional Use Permit narrative and application materials, prepared and submitted by Mahlum Architects.

**Exhibit B** Planimetric Map and Tax Lot Map, from City records.

forest grove

# NOTICE OF DECISION

**TO:** Affected Parties

**FROM:** James Reitz, AICP
Associate Planner

**DATE:** April 17, 2002

**RE:** Forest Grove School District—Neil Armstrong School Addition Conditional Use Permit Request
File Number: CU-02-01

This is your notice that on April 1, 2002, the Forest Grove Planning Commission approved a conditional use permit to allow the proposed seven-classroom addition to Neil Armstrong School (1777 Mountain View Lane). A copy of the Planning Commission's decision is enclosed.

This decision constitutes the final local action on this matter. Should you or any other affected party wish to appeal this decision, the appeal must be filed in writing, must state specifically how the decision conflicts with the purposes, intents, and provisions of the Zoning Ordinance or other applicable ordinances, and be accompanied by a $250 fee. Appeals must be filed within twenty-one (21) days from the date of this notice *(by 5:00 p.m. May 8, 2002)*.

Please call me at (503) 992-3233 if you have any questions.

CITY OF FOREST GROVE P.O. Box 326 Forest Grove, Oregon 97116 (503) 359-3200 FAX (503) 359-3207

**Planning Commission Findings and Decision Number 02-05 to Approve Conditional Use Permit CU-02-01 for the Neil Armstrong School Addition at 1777 Mountain View Lane**

**WHEREAS,** Mahlum Architects, representing Forest Grove School District 15, filed for a conditional use permit on January 30, 2002, for an 8,200-square-foot seven-classroom addition; and

**WHEREAS,** notice of this request was mailed to property owners and residents within 300 feet of the subject site on March 11, 2002, as required by Zoning Ordinance Section 9.915. Notice was also published in the *News Times* on March 27, 2002, as required by Zoning Ordinance Section 9.915. No written comments were received in response to these notices; and

**WHEREAS,** the Planning Commission held the duly-noticed public hearing on the proposed conditional use permit on April 1, 2002.

The City of Forest Grove Planning Commission does hereby approve of the conditional use permit to allow for the classroom addition to Neil Armstrong School, making the following specific findings in support of this decision:

(A) That the proposed project will comply with City parking requirements by providing 108 parking spaces. Zoning Ordinance Section 9.823 *Parking Requirements* stipulates a minimum of 2.0 and maximum of 2.5 parking spaces per classroom, for sites within Parking Zone a (as defined by Zoning Ordinance Section 9.821 *Off-Street Parking*). With a total of 49 classrooms, the proposal must have a minimum of 98 spaces and a maximum of 122 spaces.

(B) That the application meets the conditional use permit requirements as follows:

1. All city facilities and services currently serving the site are or can be made to comply with relevant City standards. The proposed addition isn't anticipated to substantially change the demand on those services, and capacity is anticipated to adequately serve the facility as modified by the proposal.
2. The proposal will provide landscaping where none currently exists, particularly in the existing parking area, which will improve the visual impact of the school on adjacent uses. The five-foot-wide perimeter landscape requirements as provided in Zoning Ordinance Section 9.826(3)(b) is not required for this project because of operational constraints, because the buffer area is not germane to compatibility issues, and because there is sufficient landscaping proposed in the parking area to address the landscape requirement.
3. No public nuisance is expected to be created. Conditions that may be injurious to the public's health, safety, and welfare are not anticipated.
4. To ensure compliance with all of the applicable provisions of the Zoning Ordinance, the Planning Commission hereby imposes the following conditions of approval:

   A. A tree permit for the removal of the two sequoia trees shall be approved by the Community Development Director prior to issuance of a building permit. The permit shall also address replacement trees (consisting of fourteen trees) consistent with the requirements of Zoning Ordinance Section 9.950. At least half of the replacement trees shall be sequoias.

B. Relocate the pedestrian walkway to the north side of the landscape island, within the staff carpark area. Wheel stops shall be installed to maintain a clear walkway width of at least five feet.

C. A low hedge shall be installed in the landscape island separating the staff carpark from the bus loading area, to discourage pedestrians from cutting through it.

D. The applicant shall identify the location of the property boundary along Mountain View Lane. Sufficient right-of-way along Mountain View Lane shall be provided to the City of Forest Grove to achieve a 30-foot half-width. If additional width is necessary, a public sidewalk and utility easement will be required. Said dedication shall be provided prior to the issuance of the building permit for the new addition.

E. The driveway shall be constructed, and traffic control devices installed, in compliance with Engineering Department specifications and conditions. These specifications shall include:

- An eight-foot-wide crosswalk. The crosswalk shall be located entirely within the Portland cement concrete (PCC) driveway entrance; and
- The PCC shall be extended to the east side of the crosswalk location.

F. Landscaping shall be installed in the island. This landscaping shall be designed to discourage pedestrian trespass while maintaining minimum vision clearances.

G. At least two trees shall be installed toward the east end of the island. These trees shall have a minimum two-inch caliper and six-foot branch height.

H. The applicant shall place one or more speed bumps along the north drive aisle in the north parking lot to aid in the reduction of vehicular speed exiting the parking lot. The location and design of the speed bumps shall be determined by the City Public Works Director, and the bumps shall be installed prior to occupancy of the addition.

I. Adjust the existing Mountain View Lane fire hydrants so that the ports face the street.

Carl Al Miller

CARL (AL) MILLER, Chair

4/15/02

Date

**CITY OF FOREST GROVE PLANNING DIVISION**
**STAFF REPORT AND RECOMMENDATION**

| | |
|---|---|
| **REPORT DATE:** | March 25, 2002 |
| **HEARING DATE:** | April 1, 2002 |
| **LAND USE REQUEST:** | Conditional Use Permit for a seven-classroom addition to Neil Armstrong Middle (7-8) School. |
| **FILE NUMBER(S):** | CUP-02-01 |
| **PROPERTY LOCATION:** | 1777 Mountain View Lane (see attached location map). |
| **LEGAL DESCRIPTION:** | Washington County Tax Lots 1S3 5AD-300 and 1100 |
| **OWNER/APPLICANT(S):** | Applicant: Mahlum Architects, 1231 NW Hoyt Street, Suite 102, Portland, Oregon 97209<br>Property Owner: Forest Grove School District 15, 1728 Main Street, Forest Grove, Oregon 97116 |
| **COMPREHENSIVE PLAN MAP AND ZONING MAP DESIGNATIONS:** | Existing<br>Comprehensive Plan designation: Public/School<br>Zoning Map designation: Single-Family Residential (R-7).<br><br>Proposed<br>Comprehensive Plan designation: Same.<br>Zoning Map designation: Same. |
| **APPLICABLE STANDARDS AND CRITERIA:** | City of Forest Grove Zoning Ordinance:<br>- Section 9.620 et. seq. Single-Family Residential (R-7).<br>- Section 9.820 et. seq. Off-Street Parking and Loading.<br>- Section 9.830 et. seq. Access, Egress and Circulation.<br>- Section 9.855 Site Plan Approval.<br>- Section 9.870 et. seq. Conditional Use Provisions. |
| **REVIEWING STAFF:** | James Reitz, AICP, Associate Planner |
| **RECOMMENDATION:** | Staff recommends approval with conditions. |

## I. LAND USE HISTORY

Zoning Ordinance Section 9.622 *Conditional Uses Permitted* (in single-family residential zones) requires that "Schools—primary, elementary, junior high, senior high, college or university, private, parochial or public" undergo review by the Planning Commission. This project is the result of a bond measure approved by the voters in November 2000. Other projects that have been brought before the Commission for review included a new 5-6 school at the Tom McCall site on Pacific Avenue, and a new K-4 school elsewhere on this site.

Zoning Ordinance Section 9.873 *Consideration of a Conditional Use Permit* authorizes the Planning Commission to act on a request for a conditional use permit after holding a public hearing pursuant to Sections 9.915 *Notice of Public Hearings and Limited Land Use Decisions* and 9.916 *Procedure for Planning Commission Action at a Public Hearing.*

Public notice for this application was mailed to property owners and residents within 300 feet of the site on March 11, 2002, as required by Section 9.915. Notice of this request was also provided to the Plans Review Board, and published in the *News Times.*

An application has also been filed by this applicant requesting a variance (VAR-02-01). This variance, if approved, would permit the construction of a driveway of greater width than normally permitted. Recommendations received from the Plans Review Board include modifying the fire hydrants along Mountain View Lane so that they will face the street, and several Engineering Department comments pertaining to the design of the proposed access. The variance request is subject to a separate staff report.

Comments received from the Plans Review Board about this application pertain to complying with various standard building, public improvement, and fire code requirements that will be addressed through the building permit review process.

As of the writing of this report, no comments have been received from the public.

## II. PROJECT DESCRIPTION AND ANALYSIS

A. Description of Proposal: Approval of this application would permit the construction of a seven-classroom addition, including an office, mechanical room, and three restrooms. Three "future classrooms" have been indicated on the plans, but are not included in this application. The addition is proposed for the east (rear) side of the existing Neil Armstrong School building. It is to be a single-story addition.

Also proposed are parking area improvements. These improvements are intended to provide better separation between buses, other traffic, and pedestrians. Also proposed is a landscaping upgrade.

Access to the site is proposed via Mountain View Lane. Two driveways provide access to the north carpark; the southern driveway is proposed to be eliminated. Further discussion of the access is contained in the variance staff report.

A portion of the existing Mountain View Lane sidewalk is located behind the property line, on school district property. Staff is proposing a condition to require

a five-foot-wide dedication, so that the sidewalk will be located entirely within the Mountain View Lane right-of-way.

B. Site Examination: The subject site totals 42.53 acres. The specific site of the proposed addition is at the rear (east) side of the existing school building, north of the gymnasium (see Exhibit D *Site Photos*). It is a flat, vacant field, with two immature sequoia trees (with diameters of 26-inches and 36-inches), and two birch trees (with 4-inch and 5-inch diameters). A small (2-inch diameter) Douglas fir tree is located just north of the proposed addition, but within the area of the future addition.

Existing Comprehensive Plan Designation and Zoning of Site and Area

Comprehensive Plan Designation: Public/School
Zoning Designation: R-7 Single-Family Residential

Surrounding Land Uses

| LOCATION | COMPREHENSIVE PLAN DESIGNATION | ZONE DISTRICT | LAND USE |
|---|---|---|---|
| North | Low-Density Residential - Standard (LDR-B) | Single-Family Residential (R-7) | Single-family residential |
| South | Low-Density Residential --Standard (LDR-B); Light Industrial (LI) | Single-Family Residential (R-7); Light Industrial (LI) | Single-family residential; Matsushita |
| East | Public/School | Single-Family Residential (R-7) | Athletic Fields |
| West | Light Industrial (LI) | Light Industrial (LI) | Single-family residential; landscape contractor, excavation company, Merix |

C. Site Design: The proposed building site is located on the rear (east) side of the existing school building, north of the gymnasium. The proposal consists of a seven-classroom addition and related facilities, with a total floor area of about 8,200 square feet. Improvements to the existing north carpark are also proposed. The carpark is to be reconfigured to provide greater separation between the buses, staff parking area, and pedestrians. The existing north driveway serving the north carpark would be shifted south and enlarged, while the existing south driveway is proposed to be closed. Additional landscaping is proposed both within the carpark, and along the Mountain View Lane frontage.

At present, the parking area has minimal landscaping: two small islands of landscaping exist in the western portion, along with a large landscape area adjacent to Mountain View Lane (see Exhibit D *Site Photos*). These islands have been landscaped with a few trees, some shrubbery, lawn, and bark dust. No landscaping has been installed along the north edge of the lot; paving extends to the property line.

The proposed landscaping would include a nine-foot-wide by 330-foot-long area separating the staff parking area from the bus parking area. Additional landscaping is proposed at both ends and the mid-point of the staff parking area. The two existing small landscape islands are proposed for removal, and the large

landscape area reconfigured (see Exhibit A Sheet L1.1 *Planting Plan*). The new landscaping is proposed to consist of a variety of deciduous and conifer trees (flowering pears, ashes, and Colorado spruces), along with shrubs and groundcover. Three London planetrees are proposed for installation as street trees.

The proposed landscape plan does not include any landscaping within the proposed median for the northern driveway or along the north property line, except in the vicinity of Mountain View Lane. Because the northern parking area (or carpark) literally abuts the rear yards of several homes, staff believes that additional landscaping should be installed to improve compatibility. The landscape area should be at least five feet wide, to comply with ZO Section 9.826(3)(b). As the one-way drive aisle is proposed to be twenty feet wide, with 45-degree parking, the aisle width could be reduced to as little at 12 ½ feet, and still be in compliance with ZO Section 9.825 Figure 4. This would allow the landscaped area to be up to 7 ½ feet wide, without compromising the carpark's functionality.

Staff has proposed two conditions to address the above issues. One, that a landscaped area at least five feet wide be installed along the north edge of the carpark; and two, that the Commission consider a condition to add landscaping to the proposed driveway median. This would improve compatibility with the surrounding area by improving the aesthetics of the carpark through reducing the extent of paved surfaces. With the proposed conditions, staff finds that the proposed landscaping and proposed street trees meet or exceed the standards of Zoning Ordinance sections 9.820 *Landscaping Required* and 9.858 *General Landscaping Standards*.

The north carpark is to be designated for bus and staff parking only. The proposed staff parking area is located north of the bus parking and loading area, and is to be separated from it by a nine-foot-wide landscaped area and four-foot-wide walkway. The walkway would be located along the south side of the landscaped area and differentiated from the bus aisle only by a four inch wide stripe. This walkway would connect with a striped crosswalk to provide pedestrian access through the lot to the building. Staff is concerned that the location of the at-grade walkway will not provide effective protection for pedestrians, as it is not physically separated from the bus maneuvering areas. Further, it is located in such a way as to encourage pedestrians to cut through the landscaping to get to the walkway. Staff believes a better approach would be to locate the walkway on the north side of the landscaped area, between it and the parking stalls. In addition, to discourage pedestrians from cutting through the landscape area, the landscaping should be upgraded to include a low hedge. Pedestrians would then be directed to use the crosswalk. Staff has proposed two conditions to require the relocation of the walkway and the addition of a hedge in the landscaped area.

Several trees will need to be removed for construction of the addition. Four trees are presently located there (see Exhibit A Sheet L1.1 *Planting Plan* and Exhibit C *Arborist's Report*): two sequoias (26-inch and 36-inch diameters) and two birches (4-inch and 5-inch diameters). According to ZO Section 9.945(D), removal of trees over six inches in diameter or larger at four feet above the ground is to be evaluated as part of the conditional use permit process. Further, a tree permit will need to be obtained, pursuant to Section 9.945(D)(4). The Commission needs to

determine if the trees should be removed. In addition, ZO Section 9.950 requires the applicant to replace any removed trees. The new trees must be at least two inches in caliper, meeting City requirements for tree type, placement, installation, and watering provisions. The tree permit would address these detailed requirements.

Staff has reviewed the tree issue and recommends their removal. ZO Section 9.945(D)(4)(h) allows removal of trees for the location of driveway, buildings, or other permanent improvements so as to avoid unreasonable economic hardship. As a result, staff has included a condition to address the tree removal issue.

D. Architecture: The proposed one-story building will be 14-feet 9-inches in height, in compliance with Zoning Ordinance Section 9.625 *Height of Buildings* (in the R-7 Zone). Proposed exterior finishes are split concrete masonry and metal frame windows (see Exhibit "A" page A3 *Exterior Elevations*). Windows are located on three elevations.

The proposed addition extends no farther in any direction than the existing building. The existing building exceeds the minimum setback requirements of the R-7 Single-Family Residential zone *(ZO Section 9.624 Setback and Lot Width Requirements*). Staff finds that the proposed building addition more than complies with minimum setback standards, and that the proposed architecture is appropriate since all required yard and height requirements are met.

E. Compatibility: The proposed facility will have seven classrooms, and be only one story in height. Windows will face north, south, and east. Due to the distance from the addition to the homes north and east of the site (280 feet and 800 feet respectively) the privacy of nearby residents should not be compromised. The south-facing windows will allow a view of the gymnasium, and little else.

The carpark is currently lighted with four "cobra head" lights; two of these are located on the south side of the lot at either end of the building canopy, the third is located on the north property line about midway between the other two, and the fourth is located in the landscaped island between the two driveways. The two lights on the south side of the lot are to remain, and be supplemented with two additional lights. Both of the remaining lights are to be relocated to within the landscaped area separating the staff parking area from the bus area. Two additional lights are also to be installed there. According to the Light and Power Department, cobra heads direct the illumination downward, rather than to the side, so additional cut-off shielding is not necessary. The applicant is also exploring the feasibility of installing timers on the lights so that they would automatically turn off in the late evening, rather than leave them on throughout the night.

F. Density: Not applicable, as this is not a residential project.

G. Traffic and Circulation: According to the Institute of Transportation Engineers Trip Generation Manual (5th Edition) elementary schools generate an average of 10.72 trips per 1,000 square feet of gross floor area. According to ITE, "Elementary school students generally use school buses more than regular transit and are "dropped off" and "picked up" more than high school students, who are apt to walk longer distances, ride bicycles, or in some cases, drive to

school. Sixty-six percent of the students at the sites surveyed are transported to school via school buses."

With approximately 8,200 square feet, this project could be anticipated to generate an additional 88 trips on the average weekday. Of these, 50% would be entering, and 50% would be exiting. For example, a parent dropping off a child in the morning would be one trip, and that same parent leaving the site is a second trip. If the parent also picks up a child in the afternoon, two more trips have been tallied.

The site will take access from Mountain View Lane, a designated Collector street. Forest Grove has defined a Collector street as one "which functions to conduct traffic between arterial streets, activity centers and neighborhoods, or which serves as a principal traffic carrier within a neighborhood, also providing access to abutting land" (Land Division Ordinance Section 9.102 *Definitions*). A middle school would fall within the definition of an "activity center" so it is appropriate that the proposed school takes access from Mountain View Lane.

Thus, because Mountain View Lane is a designated Collector street designed to accommodate the traffic generated by activity centers, and because the traffic generated by the proposed addition of only seven classrooms is expected to be nominal, the traffic is not anticipated to have a significant adverse affect on the existing street system.

H. Environmental Quality: There is no City record of any prominent environmental conditions. Storm water runoff will be treated via the water quality facility to be constructed concurrent with the K-4 school elsewhere on the project site. Due to the installation of landscaping where there is none presently, air quality may be improved.

I. Parking: Thirty-nine parking spaces currently exist in the north carpark which is proposed to be increased to 52 spaces. The south lot has 56 spaces and no changes to its capacity are proposed. ZO Section 9.823 *Parking Requirements* requires a minimum of 2.0 parking spaces to a maximum of 2.5 parking spaces per classroom for K-8 schools. With a total of 49 classrooms, including the proposed addition of seven classrooms, this school would require 98-to-122 parking spaces. As 108 spaces are proposed, the number of parking spaces would comply with City standards.

J. Public Services: Please refer to Exhibit A page C3.1 *Utility Plan.* Utilities will be extended from the building to the addition.

Sanitary Sewer – City sanitary sewer facilities are available in Mountain View Lane. Capacity is adequate to serve the proposed use.

Water – City water facilities are available in Mountain View Lane. Water supply will be adequate to serve the proposed use.

Storm Drainage – City storm drainage facilities are available in Mountain View Lane and Heather Street. Storm drainage from the addition will be routed through the new water quality facility to be constructed with the new K-4 school elsewhere on the site. Storm drainage will be adequate to serve the proposed use.

Electrical Service – Electrical supply is adequate to serve the proposed use.

Public School Systems – The purpose of this application is to provide additional public educational facilities, as per the Forest Grove School District master facilities plan.

Other Public Services -- Police, fire, and sanitation services are available and are adequate to serve the proposed use. Additional fire hydrants will be required on site as a result of this project, to comply with Oregon (OUFC) Uniform Fire Code standards. In addition, the two existing fire hydrants located adjacent to Mountain View Lane need to be turned to face the street, in compliance with OUFC Section 901.2.2.2; staff has recommended a condition to require this adjustment.

## III. APPROVAL CRITERIA, FINDINGS AND ANALYSIS

Zoning Ordinance Section 9.873 *Consideration of Conditional Use Application* requires that the Commission find that the proposal complies with the following criteria:

**(1) That all public facilities serving the proposed use, including but not limited to sanitary sewers, water, streets, storm drains, electrical distribution, parks and public safety and schools are adequate, and meet current City standards;**

Applicant's Response: *Sanitary sewer waste from the new classroom addition will be handled by a private on-site system design in accordance with the City of Forest Grove and Clean Water Services standards. As per the attached utility plan, new sewer lines will connect to the existing system inside the Neil Armstrong Middle School (NAMS). The City of Forest Grove has approved an 11,800 SF water quality and detention pond east of the proposed building site, in the northeast portion of the adjoining K-4 School site (Please see CU-01-03). This facility has been designed in accordance with the City of Forest Grove and Clean Water Services standards, and will accommodate storm water from both the K-4 school site and the NAMS addition site. Water, electrical distribution, and other utilities will connect to the existing NAMS building systems. No additional new connections to city services will be required.*

Staff Analysis and Findings: Based on the analysis in the staff report, the impact to public facilities and services will be negligible as the parcel is adequately served.

**(2) That the proposed use provides adequate open space, landscaping, and aesthetic design treatment to mitigate any possible adverse effect on said use on surrounding properties and uses;**

Applicant's Response: *The existing NAMS site provides extensive open space in the surrounding athletic fields and playground areas. The new classroom addition will have minimal impact on the amount of open space. Landscaping is provided*

*in the parking lot area and other locations as appropriate per the City of Forest Grove Zoning Ordinance. The massing and exterior design of the classroom addition is intended to be compatible with the existing NAMS building. Adjacent single-family residences are buffered from both the existing building and the new addition by fencing, open space and landscaping, and consequently should not be adversely affected by the design of the addition.*

Staff Analysis and Findings: The proposed building site is bounded on all sides by additional school facilities. The nearest homes are located to the north, approximately 280 feet away and should not be affected by the building addition.

The existing north parking area is to be landscaped, including a landscape island down the middle of the lot which will provide a greater visual separation between the school building and the residential area than currently exists. The island is to include flowering pear trees. Ash trees and London plane trees are proposed near the street. These trees will provide additional visual separation, and when leafed out, will obscure parking area lighting. A condition to require additional landscaping along the north property line would provide additional visual separation to mitigate adverse impacts on the adjacent residential area.

**(3) That the proposed use will ensure that no land will be used for any purpose which creates or causes to be created any public nuisance, including but not limited to air, land, or water degradation, noise, glare, heat, vibration, or other conditions which may be injurious to public health, safety, and welfare;**

Applicant's Response: *There are no local environmental problems anticipated as a result of the proposed classroom addition. Mechanical equipment, transformers, generators and other typical sources of public complaint, have been located inside the building to minimize their potential for noise, vibration and so on.*

Staff Analysis and Findings: No air, land, heat, noise, or vibration issues are anticipated as a result of the building. Glare from carpark may be a factor, but should be adequately mitigated by the proposed landscaping. As the proposed facilities are located well away from most adjacent uses, no conditions are anticipated to be created that would be injurious to public health, safety, or welfare.

**(4) That the proposed use will comply with the purpose of this section and with all of the applicable provisions of the Zoning Ordinance.**

Applicant's Response: *To the best of our knowledge, the design fully complies with all City of Forest Grove Zoning Ordinance requirements*

Staff Analysis and Findings: With the proposed conditions, this project will comply with all applicable provisions of the Zoning Ordinance.

## IV. ALTERNATIVES

The Planning Commission may approve as submitted, approve with conditions, continue deliberations to a date certain, or deny this request.

## V. RECOMMENDATION

Based on the information provided in the application and the findings above, staff recommends approval of the application for a conditional use permit for the proposed seven classroom addition to Neil Armstrong School, with the following conditions:

1. A tree permit for the removal of the two sequoia trees shall be approved by the Community Development Director prior to issuance of a building permit. The permit shall also address replacement trees consistent with the requirements of Zoning Ordinance Section 9.950. At least half of the replacement trees shall be sequoias.
2. Install landscaping along the north edge of the carpark. This landscaped area shall be at least five feet wide, in compliance with ZO Section 9.826(3)(b) *Parking Lot Design Standards* and 9.858 *General Landscaping Standards.*
3. Relocate the pedestrian walkway to the north side of the landscape island, within the staff carpark area. Wheel stops shall be installed to maintain a clear walkway width of at least five feet.
4. A low hedge shall be installed in the landscape island separating the staff carpark from the bus loading area, to discourage pedestrians from cutting through it.
5. Provide a five-foot-wide right-of-way dedication along Mountain View Lane to provide a 30-foot-wide street half-width. If additional width is necessary, a public sidewalk and utility easement will be required.
6. The driveway shall be constructed, and traffic control devices installed, in compliance with Engineering Department specifications and conditions. These specifications shall include:

    - An eight-foot-wide crosswalk. The crosswalk shall be located entirely within the Portland cement concrete (PCC) driveway entrance; and
    - The PCC shall be extended to the east side of the crosswalk location.

8. Landscaping shall be installed in the island. This landscaping shall be designed to discourage pedestrian trespass while maintaining minimum vision clearances.
9. At least two trees shall be installed toward the east end of the island. These trees shall have a minimum two-inch caliper and six-foot branch height.
10. Adjust the existing Mountain View Lane fire hydrants so that the ports face the street.

## VI. LIST OF EXHIBITS

The following exhibits were received, marked, and entered into the record as evidence for this application at the time this staff report was written. Exhibits received after the date of this report will be marked beginning with the next consecutive letter and will be entered into the record at the time the public hearing is opened, prior to oral testimony.

| | |
|---|---|
| **Exhibit A** | Conditional Use Permit narrative and application materials, prepared and submitted by Mahlum Architects. |
| **Exhibit B** | Planimetric Map and Tax Lot Map, from City records. |
| **Exhibit C** | Arborist's Report |
| **Exhibit D** | Site Photos |

# **Exhibit G:** Forest Grove School District Field Light Operations Memorandum

FOREST GROVE SCHOOL DISTRICT
ROOTED IN COMMUNITY – GROWING STRONG

# MEMORANDUM

To: City of Forest Grove
From: Forest Grove School District
Date: March 31, 2025
Re: Neil Armstrong MS Field Light Operations

---

Dear City of Forest Grove Officials,

This memo outlines the expected plan for managing field operations and lighting schedules to balance the needs of school sports, youth activities and public access, while adhering to efficiency and maintaining community relations.

General Field Use Expectations:

- Lights generally shut off by 10 PM
- Field and light usage will be by school sports, youth athletics (soccer/football), and adult / community, prioritized in that order
- Non-school users will need to reserve the fields, and the school district will be responsible for renting fields to private parties.
- Fields will be accessible by the public when not reserved, but field lights will only be active if an authorized after-dark event is in progress.

We hope to ensure fields are used efficiently and equitably while providing the flexibility needed to meet the diverse needs of the community. Please feel free to contact me with any questions.

Ilean Clute
Director of Finance and Operations
iclute@fgsd.k12.or.us

# **Exhibit H:** Lighting Memorandum (MUSCO)

Corporate: 100 1st Ave West · PO Box 808 · Oskaloosa, IA 52577 · 641/673-0411 · 800/825-6020 · Fax: 641/673-4852
Manufacturing: 2107 Stewart Road · PO Box 260 · Muscatine, IA 52761 · 563/263-2281 · 800/756-1205 · Fax: 800/374-6402
Web: www.musco.com · Email: lighting@musco.com

# Neil Armstrong Middle School Field Lighting Project

March 12th, 2025

Dear City of Forest Grove Officials,

This memo addresses the care that has been taken to minimize spill light and glare on adjacent properties from the proposed field lighting system at Neil Armstrong Middle School.

Glare Measurement:

Per the Illuminating Engineering Society, IES TM-15-1, BUG rating is only applicable for non-aimable fixtures. Since all Musco Sports Lighting fixtures are aimable, BUG rating does not apply. In turn, Candela is used to measure glare. Candela or Candlepower is the luminous intensity emitting from a light source in a particular direction. The International Commission of Illumination recommends per CIE150:2003 that candela to be no greater than 10,000 Candela.

Light Spill:

The light spill currently seen on the photometric lighting design is entirely caused by indirect light reflecting off the pole. The reflected light is not considered a nuisance and is negligible because it's indirect light. Indirect light is more of a soft light source rather than a direct more intense light source. The indirect light is also minimal and is less than the spill of existing streetlights. It quickly dissipates to 0 footcandles as you get further from the pole towards the residential property line.

Pole Height:

The height of the pole is determined by the light levels required on the field for a specific application or activity, setback distance from the middle of the field, optimal aiming angles, and overall light control. Pole height impacts aiming and spill light. The shorter the pole height, the shallower the aiming angle. Shorter poles for this application will cause increased amounts of glare on the field and increase the spill light and glare onto neighboring homes and/or properties. (see the Pole Height and Spill Light Diagram included with these materials).

Candela (Glare) Categories:

High Glare (150,000 or more candela): Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones. For example, on the field of play.

Significant Glare (25,000 to 75,000 Candela): Equivalent to high beam headlights of a car.

The proposed field lighting design has a maximum candela amount of 4,861.95 (minimal to no glare).

**Care has to be taken to minimize high glare zones on the field and remove glare off the field.**

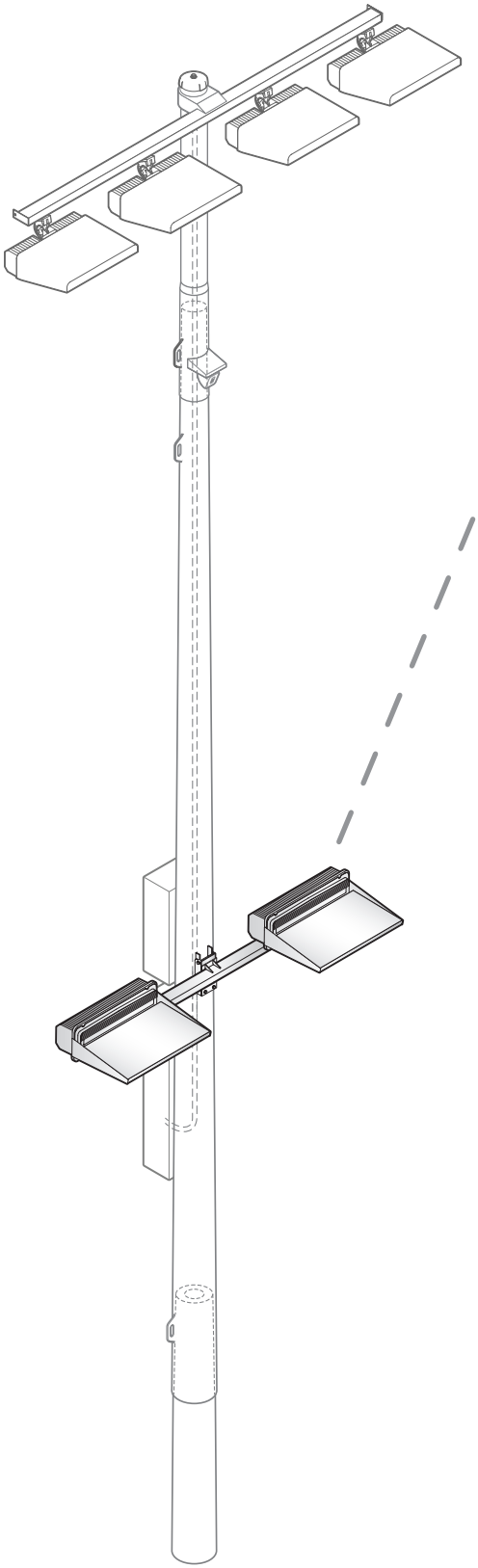
If you have any questions regarding this information, please feel free to call me at 971.221.8648.

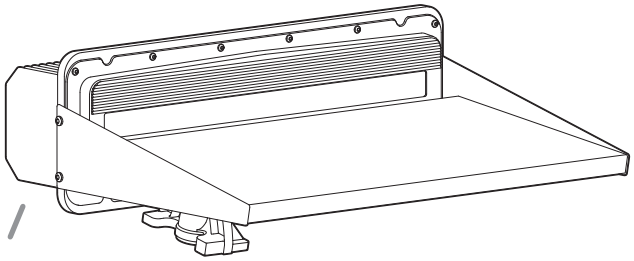
Sincerely,

Rick Charbonneau
Field Sales Representative
Musco Sports Lighting, LLC

# **Exhibit I:** Lighting Cut Sheets

# Luminaire and Driver – TLC-BT-575





## Luminaire Data

| | |
|---|---|
| Weight (luminaire) | 34 lb (15 kg) |
| UL listing number | E338094 |
| UL listed for USA/Canada | UL1598 CSA-C22.2 No.250.0 |
| CE Declaration | LVD, EMC, RoHS |
| Ingress protection (luminaire) | IP65 |
| Impact rating | IK07 |
| Material and finish | Aluminum, powder-coat painted |
| Wind speed rating (aiming only) | 150 mi/h (67 m/s) |
| UL, IEC ambient temperature rating (luminaire) | 50°C (122°F) |

**Photometric Characteristics**

| | |
|---|---|
| Projected lumen maintenance per IES TM-21-11 | |
| L90 (20k) | >120,000 h |
| L80 (20k) | >120,000 h |
| L70 (20k) | >120,000 h |
| Lumens[1] | 52,000 |
| CIE correlated color temperature | 5700 K |
| Color rendering index (CRI) | 75 typ, 70 min |
| LED binning tolerance | 7-step MacAdam Ellipse |

Footnotes:

1) Incorporates appropriate dirt depreciation factor for life of luminaire.

**All components from foundation to poletop are designed to work together in Light-Structure System™ to ensure reliable, trouble-free operation.**

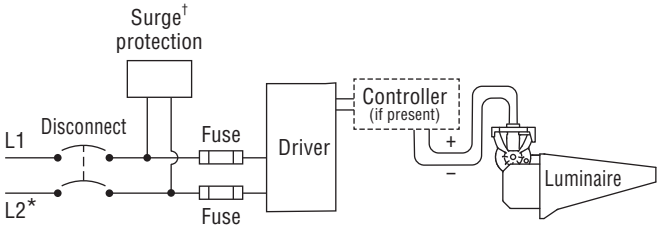
# Luminaire and Driver – TLC-BT-575

## Driver Data

### Electrical Data

| | |
|---|---|
| Rated wattage[1] | |
| Per driver | 575 W |
| Per luminaire | 575 W |
| Number of luminaires per driver | 1 |
| Starting (inrush) current | <40 A, 256 µs |
| Fuse rating | 15 A |
| UL, IEC ambient temperature rating, electrical components enclosure | 50°C (122°F) |
| Ingress protection, electrical components enclosure | IP54 |
| Efficiency | 95% |
| Total harmonic distortion (THD) at full output | <20% |

Typical Wiring




* If L2 is neutral then not switched or fused.

† Not present if indoor installation.

| | 200 Vac 50/60 Hz | 208 Vac 60 Hz | 220 Vac 50/60 Hz | 230 Vac 50 Hz | 240 Vac 50/60 Hz | 277 Vac 60 Hz | 347 Vac 60 Hz | 380 Vac 50/60 Hz | 400 Vac 50 Hz | 415 Vac 50 Hz | 480 Vac 60 Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Max operating current per luminaire[2]** | 3.48 A | 3.35 A | 3.16 A | 3.03 A | 2.90 A | 2.51 A | 2.01 A | 1.83 A | 1.74 A | 1.68 A | 1.45 A |

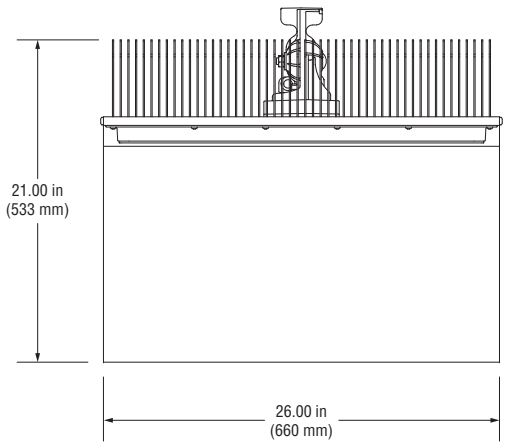
Footnotes:

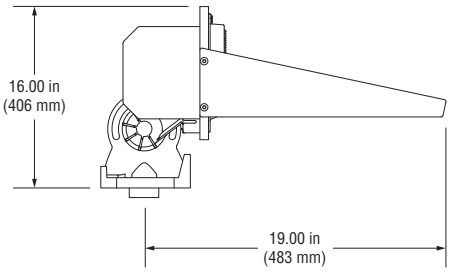
1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25°C ambient temperature environment.

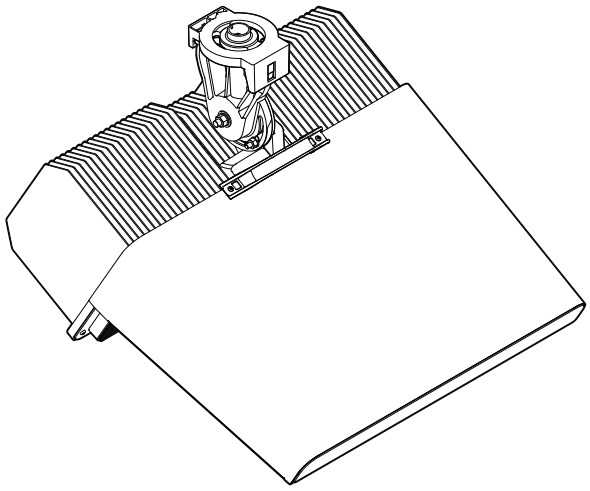
2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

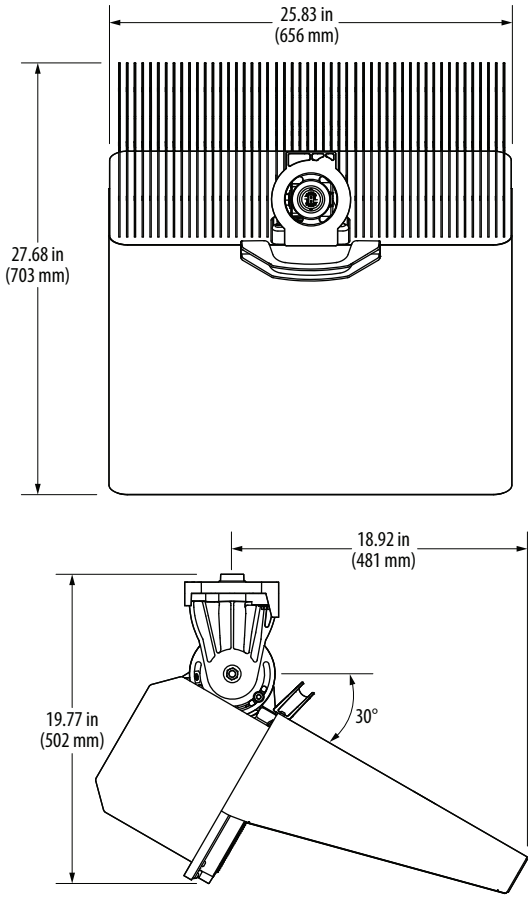
Notes

1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See *Musco Control System Summary* for circuit information.








## Luminaire Data

| | |
|---|---|
| Weight (luminaire) | 67 lb (30 kg) |
| UL listing number | E338094 |
| UL listed for USA/Canada | UL1598<br>CSA-C22.2 No.250.0 |
| CE Declaration | LVD, EMC, RoHS |
| Ingress protection (luminaire) | IP66 |
| Impact rating | IK07 |
| Material and finish | Aluminum,<br>powder-coat painted |
| Wind speed rating (aiming only) | 150 mi/h (67 m/s) |
| UL, IEC ambient temperature rating (luminaire) | 50°C (122°F) |

### Photometric Characteristics

| | |
|---|---|
| Projected lumen maintenance per IES TM-21-11 | |
| L90 (20k) | >120,000 h |
| L80 (20k) | >120,000 h |
| L70 (20k) | >120,000 h |
| Lumens[1] | 148,420 |
| CIE correlated color temperature | 5700 K |
| Color rendering index (CRI) | 90 typ |
| LED binning tolerance | 5-step MacAdam Ellipse |
| Television lighting consistency index (TLCI) | 75 min |

Footnotes:

1) Value represents most common optical variation. Incorporates appropriate dirt depreciation factor for life of luminaire.

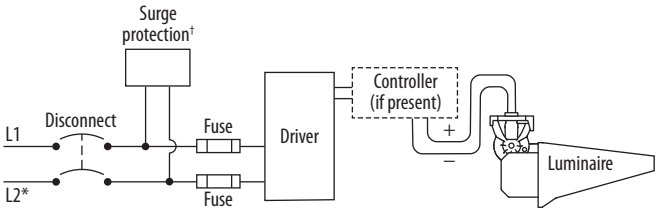
U.S. and foreign patent(s) issued and pending • ©2018, 2024 Musco Sports Lighting, LLC. • TLC-LED-1500 5700 K 90 CRI Typ • M-4552-en04-5

# Driver Data

## Electrical Data

| | |
|---|---|
| Rated wattage[1] | |
| Per driver | 1410 W |
| Per luminaire | 1410 W |
| Number of luminaires per driver | 1 |
| Starting (inrush) current | <40 A, 256 µs |
| Fuse rating | 15 A |
| UL, IEC ambient temperature rating (electrical components enclosure) | 50°C (122°F) |
| Ingress protection (electrical components enclosure) | IP54 |
| Efficiency | 95% |
| Dimming mode | optional |
| Range, energy consumption | 10 – 100% |
| Range, light output | 15 – 100% |
| Flicker | <2% |
| Total harmonic distortion (THD) at full output | <20% |

Typical Wiring




* If L2 is neutral then not switched or fused.
† Not present if indoor installation.

| | 200 Vac 50/60 Hz | 208 Vac 60 Hz | 220 Vac 50/60 Hz | 230 Vac 50 Hz | 240 Vac 50/60 Hz | 277 Vac 60 Hz | 347 Vac 60 Hz | 380 Vac 50/60 Hz | 400 Vac 50 Hz | 415 Vac 50 Hz | 480 Vac 60 Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Max operating current per luminaire[2]** | 8.71 A | 8.37 A | 7.92 A | 7.57 A | 7.26 A | 6.29 A | 5.02 A | 4.59 A | 4.36 A | 4.20 A | 3.63 A |

Footnotes:

1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25°C ambient temperature environment.

2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

Notes

1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See *Musco Control System Summary* for circuit information.

# **Exhibit J:** Neighborhood Meeting Materials

# NEIGHBORHOOD MEETING
# AFFIDAVIT OF MAILING

STATE OF OREGON )
SS
County of Washington )

I, Tracie McLaughlin, being duly sworn, say that on the twenty-fourth day of January, 2024 I caused to have mailed, to each of the persons on the attached list, a notice of a meeting to discuss a proposed development at 4445 Heather Street Neil Armstrong Middle School athletic field, a copy of which notice so mailed is attached hereto and made a part thereof.

I further state that said notices were enclosed in envelopes plainly addressed to said persons and were deposited on the date indicated above in the United States Post Office with postage prepaid thereon.

Tracie McLaughlin
Signature

Subscribed and sworn to, or affirmed, before me this 29th day of January, 2025.

Martha Jo Rakestraw
Notary Public for the State of Oregon
County of Washington
My Commission expires: 2/15/17

OFFICIAL STAMP
MARTHA JO RAKESTRAW
NOTARY PUBLIC - OREGON
COMMISSION NO. 1034039
MY COMMISSION EXPIRES FEBRUARY 15, 2027

January 28, 2025

**Ref: Neighborhood Meeting**
**Neil Armstrong Middle School Field Lighting**

Dear Neighbor/Property Owner:

AKS Engineering & Forestry, LLC is holding a neighborhood meeting regarding a ±4.31-acre property located at the northeast corner of the intersection of Mountain View Lane and Heather Street. The property is the site of the Neil Armstrong Middle School track and athletic field and is described as Washington County Assessor's Map 1S305AD Tax Lot 1100. The property is subject to the Institutional (INST) district per the City of Forest Grove Zoning Map. The project involves adding field lighting to the athletic fields associated with the Neil Armstrong Middle School. The applicant plans to submit an application for a conditional use permit.

Prior to applying to the City of Forest Grove, we would like to take the opportunity to discuss the project in more detail with you. The purpose of this meeting is to provide a forum for surrounding property owners/residents to review and discuss the project before the application is submitted to the City. We will attempt to answer questions relevant to meeting development standards consistent with the City of Forest Grove Development Code.

Pursuant to Forest Grove Development Code Chapter 17.1.220, you are invited to attend a meeting on:

**February 18, 2025, at 6:00 pm**
**Neil Armstrong Middle School**
**1777 Mountain View Lane**
**Forest Grove, OR 97116**

Please note this meeting will be an informational meeting based on preliminary plans. These plans may be altered prior to submittal of the application to the City. Depending upon the type of land use action required, you may receive official notice from the City of Forest Grove inviting you to participate with written comments and/or providing you an opportunity to attend a public hearing.

I look forward to discussing this project with you. If you have questions, but will be unable to attend, please feel free to contact me at 503-563-6151 or slotemakerm@aks-eng.com.

Sincerely,
***AKS ENGINEERING & FORESTRY, LLC***



Melissa Slotemaker, AICP
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
503-563-6151 | slotemakerm@aks-eng.com

28 de enero de 2025

**Ref: Reunión de vecinos**
**Iluminación del campo de la escuela secundaria Neil Armstrong**

Estimado vecino/propietario:

AKS Engineering & Forestry, LLC está llevando a cabo una reunión de vecinos con respecto a una propiedad de ±4,31 acres ubicada en la esquina noreste de la intersección de Mountain View Lane y Heather Street. La propiedad es el sitio de la pista y el campo de atletismo de la escuela secundaria Neil Armstrong y se describe como Mapa del tasador del condado de Washington 1S305AD Lote fiscal 1100. La propiedad está sujeta al distrito institucional (INST) según el mapa de zonificación de la ciudad de Forest Grove. El proyecto implica agregar iluminación de campo a los campos de atletismo asociados con la escuela secundaria Neil Armstrong. El solicitante planea presentar una solicitud para un permiso de uso condicional.

Antes de presentar la solicitud a la ciudad de Forest Grove, nos gustaría aprovechar la oportunidad para analizar el proyecto con más detalle con usted. El propósito de esta reunión es brindar un foro para que los propietarios/residentes de las propiedades alrededores revisen y discutan el proyecto antes de que se envíe la solicitud a la Ciudad. Intentaremos responder preguntas relacionadas con el cumplimiento de los estándares de desarrollo de acuerdo con el Código de Desarrollo de la Ciudad de Forest Grove.

De conformidad con el Capítulo 17.1.220 del Código de Desarrollo de Forest Grove, se le invita a asistir a una reunión el:

**18 de febrero de 2025, a las 6:00 p. m.**
**Escuela secundaria Neil Armstrong**
**1777 Mountain View Lane**
**Forest Grove, OR 97116**

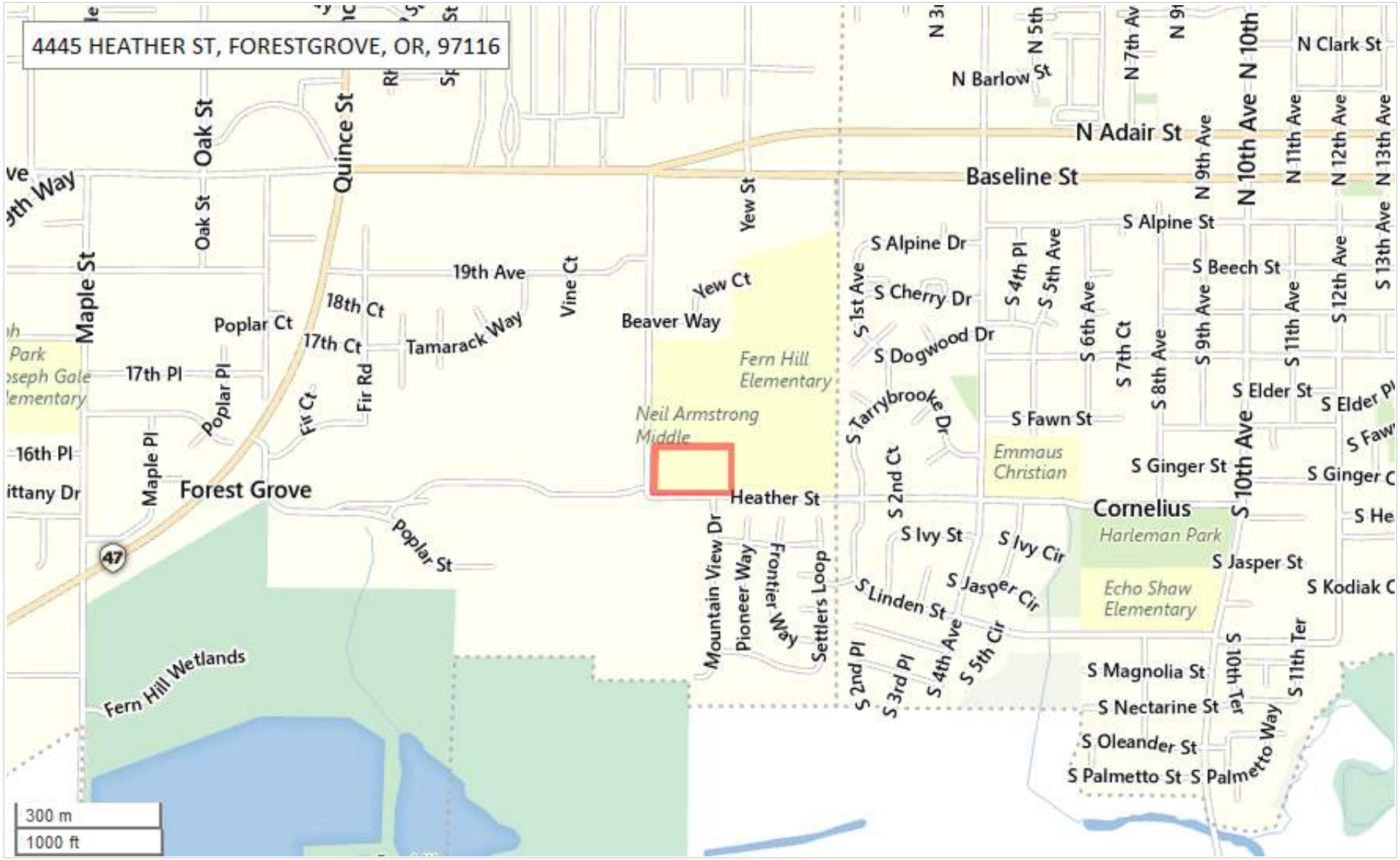
Tenga en cuenta que esta reunión será una reunión informativa basada en planes preliminares. Estos planes pueden modificarse antes de la presentación de la solicitud a la Ciudad. Dependiendo del tipo de acción de uso de la tierra requerida, es posible que reciba un aviso oficial de la Ciudad de Forest Grove invitándolo a participar con comentarios escritos y/o brindándole la oportunidad de asistir a una audiencia pública.

Espero poder hablar sobre este proyecto con usted. Si tiene preguntas pero no podrá asistir, no dude en comunicarse conmigo al 503-563-6151 o slotemakerm@aks-eng.com.

Atentamente,
***AKS ENGINEERING & FORESTRY, LLC***



Melissa Slotemaker, AICP
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
503-563-6151 | slotemakerm@aks-eng.com




Metro

Data Resource Center
600 NE Grand Ave, Portland, OR 97232
503.797.1742 – drc@oregonmetro.gov

This Web site is offered as a public service, integrating various government records into a region-wide mapping system. The property assessment records are a multi-county integration of Clackamas, Multnomah and Washington County records. MetroMap blends each county's records into a common database on a quarterly basis. Therefore, to view each county's official records, go to their respective web sites or offices. The other MetroMap data are derived from city, county, state, federal and Metro sources. The metadata (data about the data) are included on this site, including the sources to be consulted for verification of the information contained herein. It describes some cases where Metro blends city and county records by generalizing the disparities. Metro assumes no legal responsibility for the compilation of multi-source government information displayed by Metro Map.

# Neil Armstrong Middle School

## Athletic Field Lighting

Neighborhood Meeting
February 18, 2025



1

# Project Team

- Forest Grove School District
  - Applicant - Ilean Clute
- Cornerstone Management Group, Inc.
  - Project Management - Emil Hameed
- MUSCO
  - Lighting Consultant - Rick Charbonneau
- AKS Engineering & Forestry, LLC
  - Land Use Planning - Melissa Slotemaker

# Subject Site

- South of Neil Armstrong Middle School (1777 Mountain View Lane)
- West of Fernhill Elementary School
- Northeast of Mountain View Lane and Heather Street intersection






AKS ENGINEERING & FORESTRY

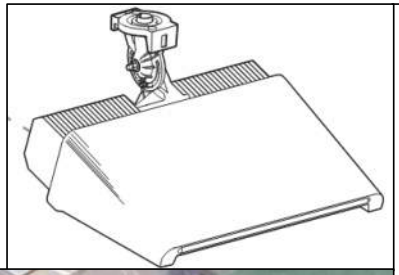
# Project Overview

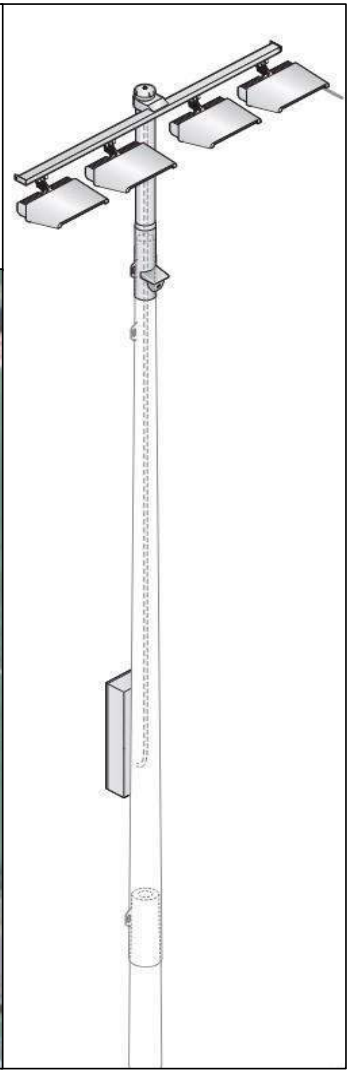
- Athletic Fields Lighting Installation
  - Soccer/youth football field
  - For use by Neil Armstrong Middle School, Fernhill Elementary School and community sports groups

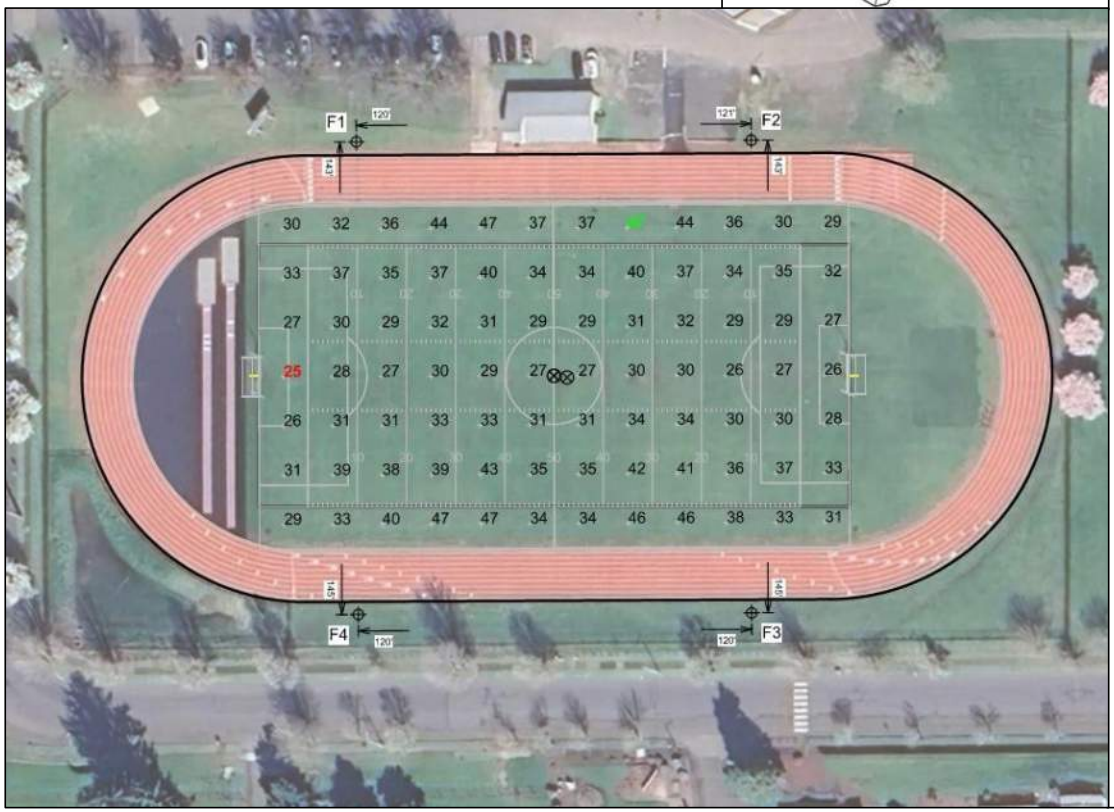


# Project Goals

- Install lighting for athletic fields
  - Lighting targeted toward fields
  - Fully shielded
  - School, community uses (sporting events, etc.)

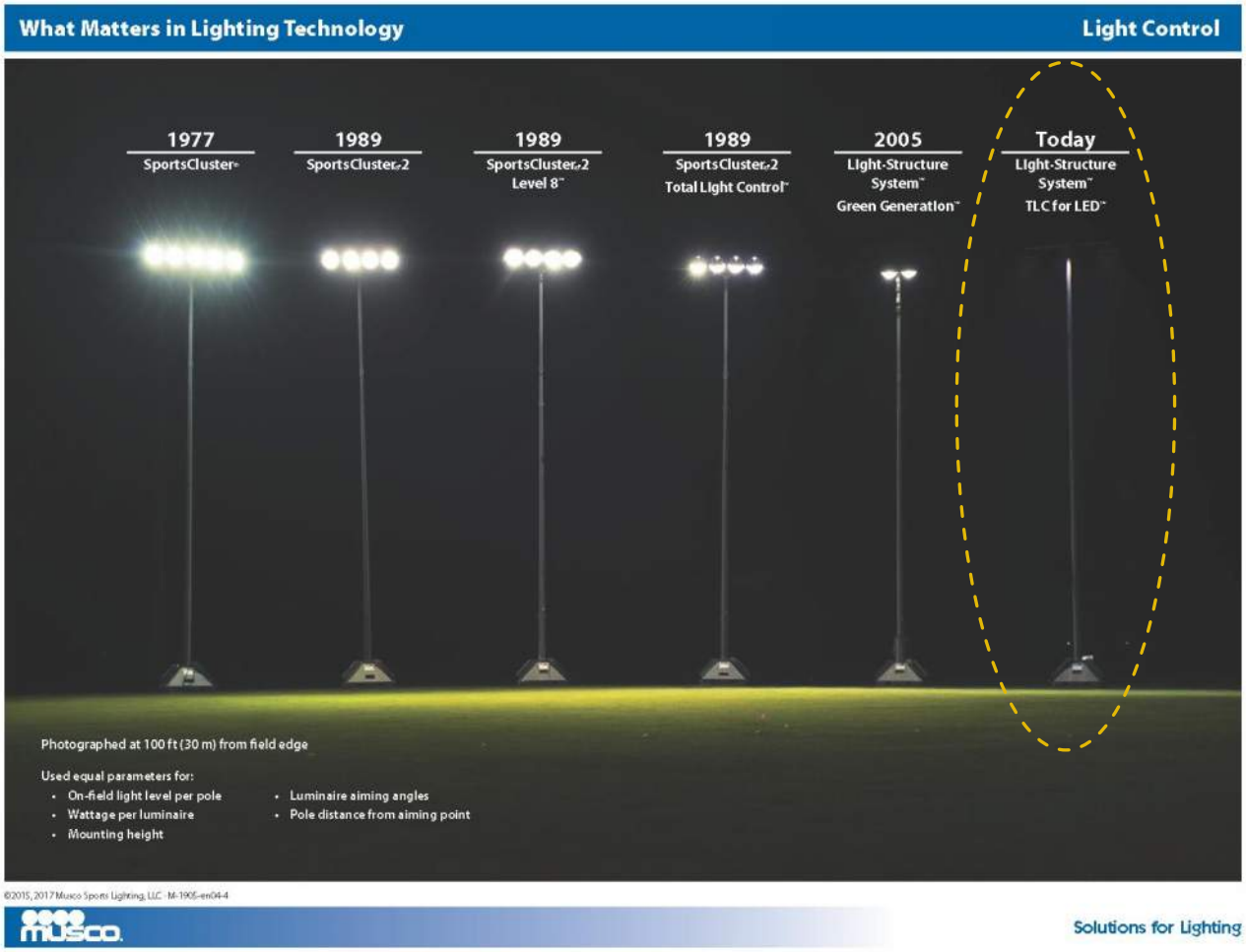






# Evolution of Lighting Technology

- No spill-over
- No glare
- Minimal reflective light
- Lighting not directed outward



# Conestoga Middle School

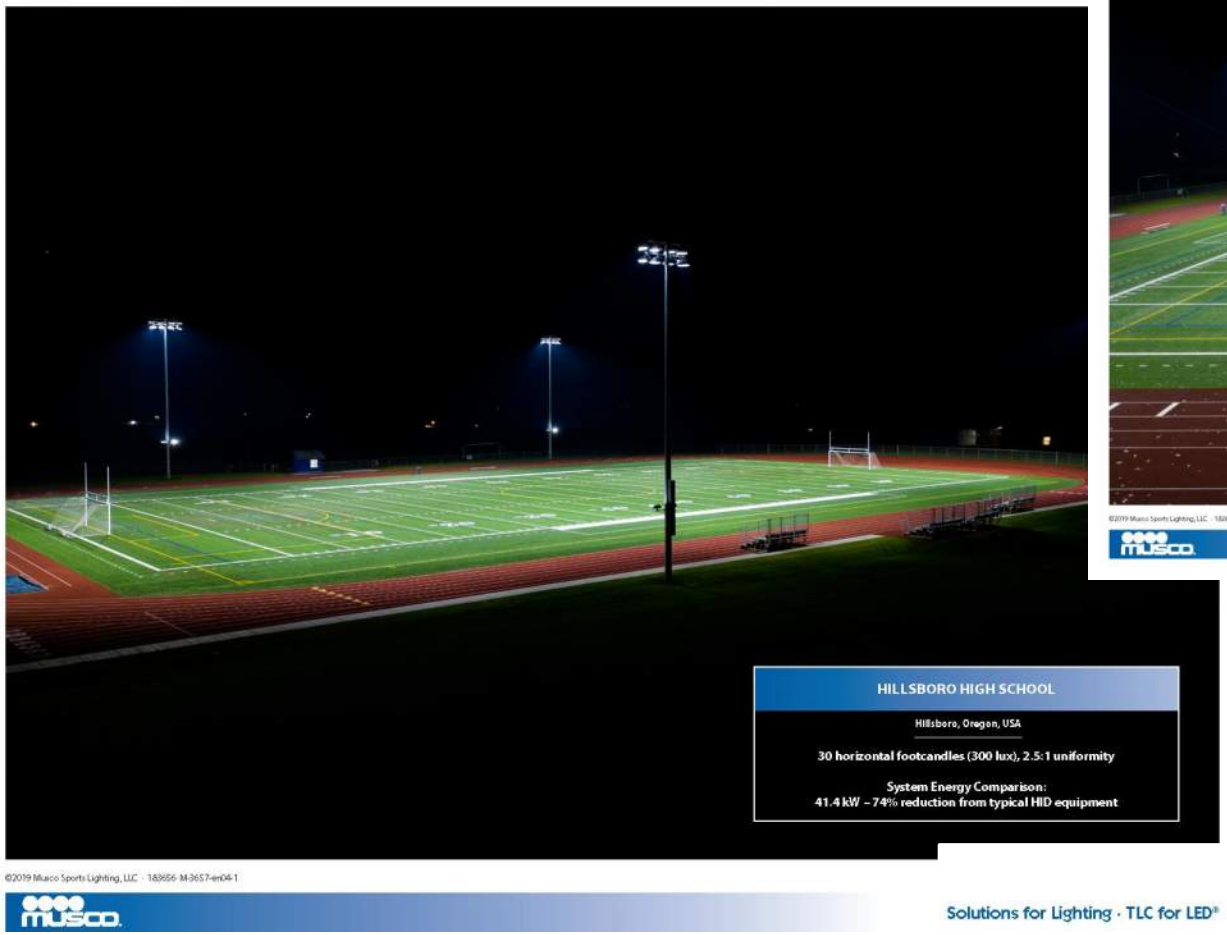
» Beaverton, OR

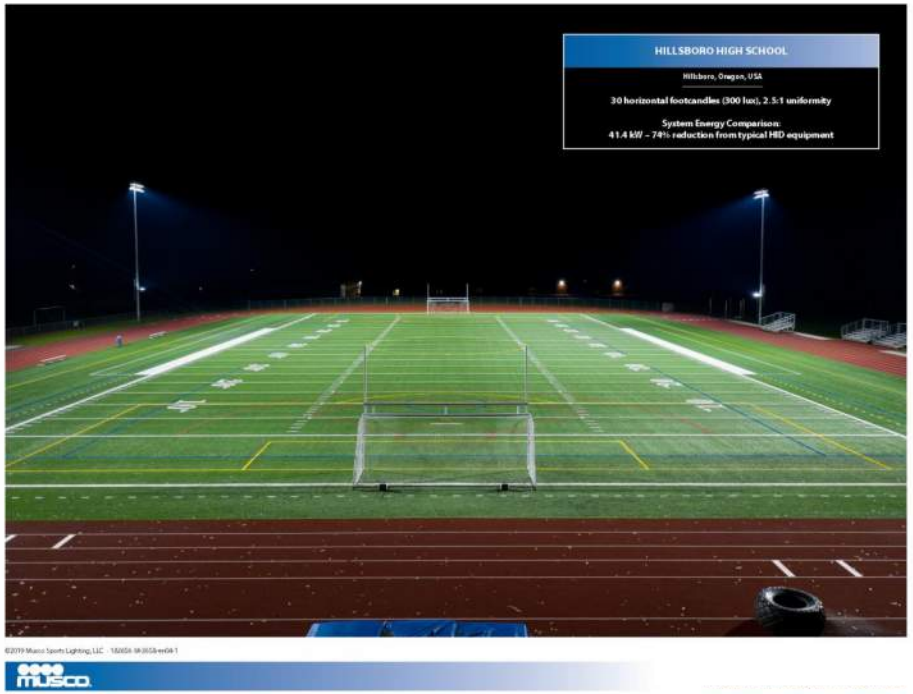




# Hillsboro High School

» Hillsboro, OR

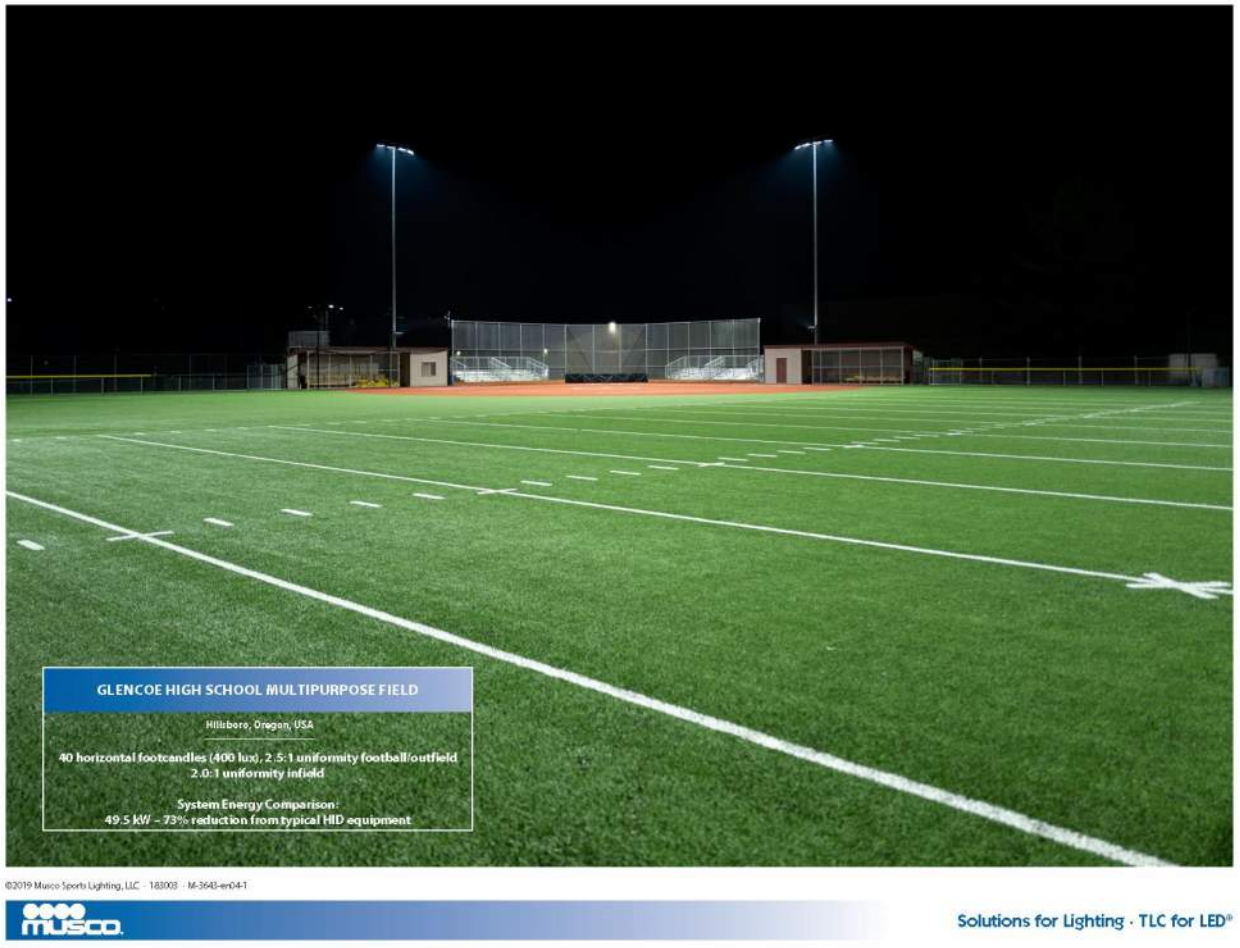



AKS ENGINEERING & FORESTRY

# Glencoe High School

- Hillsboro, OR






AKS ENGINEERING & FORESTRY

# The Process

The application will follow a Type III land use process.



# Questions?

**Melissa Slotemaker**
AKS Engineering & Forestry
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
slotemakerm@aks-eng.com
(503) 563-6151

AKS ENGINEERING & FORESTRY, LLC
12965 SW Herman Road, Suite 100, Tualatin, OR 97062
P: (503) 563-6151 F: (503) 563-6152

OFFICES IN: TUALATIN, OR - VANCOUVER, WA - KEIZER, OR - BEND, OR

| | |
|---|---|
| Neil Armstrong Middle School<br>Field Lighting Application | Neil Armstrong Middle School |
| February 18, 2025<br>6:00 p.m. | 1777 Mountain View Lane<br>Forest Grove, OR 97116 |

***PLEASE PRINT CLEARLY***

| Printed Name | Full Mailing Address | Email Address | Phone # |
|---|---|---|---|
| BOB ROBERT McWILLIAMS | 1406 PIONEER FORESTGROV WAY | bMCW1@FRONTIER.COM | 5036803288 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

March 28, 2025

**Neighborhood Meeting Summary:** Neil Armstrong Middle School Field Lighting Project
**Meeting Date:** February 18, 2025
**Time:** 6:00 PM
**Location:** **Neil Armstrong Middle School**

The following serves as a summary of the Neighborhood Meeting process. On January 28, 2025, property owners within 300 feet of the proposed development site were sent notification of the planned Neil Armstrong Middle School field lighting project, which includes an application to modify the existing Conditional Use Permit. This notification included the project location, project details, and the neighborhood meeting date, time, and location.

On February 18, 2025, meeting presenters included the following individuals:

- Melissa Slotemaker of AKS Engineering & Forestry, LLC.
- Emil Hameed of Cornerstone Management Group, Inc.
- Rick Charboneau of Musco Sports Lighting, LLC.
- Ilean Clute of Forest Grove School District.

The meeting began with an introduction by Melissa Slotemaker summarizing the project and the application type and process. Rick Charboneau provided details on the planned lighting and its function. Information about the City's review process and opportunities for public input were also provided. Following the presentation, attendees were then given the opportunity to ask questions. The following topics were discussed:

- Timing and light levels for the field lighting and overall lighting across the site.
- The types and amount of activity on the field.
- Concerns about existing users of other school fields.
- Timing of the application and construction of the field lighting.

The meeting concluded at approximately 6:45 pm.

Sincerely,
***AKS ENGINEERING & FORESTRY, LLC***

Melissa Slotemaker, AICP
12965 SW Herman Road, Suite 100 | Tualatin, OR 97062
P: 503.563.6151 | slotemakerm@aks-eng.com

# Site Plan and Design Review
# Staff Report and Recommendation

Community Development Department, Planning Division

| | |
|---|---|
| **REPORT DATE:** | May 23, 2025 |
| **HEARING DATE:** | June 3, 2025 |
| **LAND USE REQUEST:** | Site plan approval and design review of a proposed 2-building 17-unit apartment complex |
| **FILE NUMBER:** | 311-24-000031-PLNG |
| **PROJECT NAME:** | None |
| **PROPERTY LOCATION:** | 1930 23rd Avenue |
| **LEGAL DESCRIPTION:** | Washington County Tax Lot 1N331CC05601 |
| **APPLICANT:** | Scott McDonald, Studio 3 Architecture<br>275 Court St NE<br>Salem OR, 97301 |
| **OWNER:** | Sunny Singh<br>120 E Ellendale Ave<br>Dallas OR, 97338 |
| **COMPREHENSIVE PLAN MAP DESIGNATION:** | Community Commercial |
| **ZONING MAP DESIGNATION:** | Community Commercial (CC) |
| **APPLICABLE STANDARDS AND CRITERIA:** | City of Forest Grove Development Code<br>§17.2.300 et. seq. *Design Review*<br>§17.2.400 et. seq. *Site Development Review*<br>§17.3.300 - .340 *Commercial & Mixed-Use Zones*<br>§17.7.040 *Fence Standards*<br>§17.7.300 et. seq. *Solid Waste and Recycling*<br>§17.8.000 et. seq. *General Development Standards*<br><br>City of Forest Grove Design Guideline Handbook<br>Focus Area III *Multi-Unit Residential Focus Area* |
| **REVIEWING STAFF:** | Matt Johnson (AICP), Senior Planner |

**RECOMMENDATION:** Staff recommends approval with conditions

# I. LAND USE HISTORY

The service repair garage located at 1930 23rd Avenue was constructed in 1945.

Because the proposed project would exceed 5 dwelling units, the Design Guidelines require Planning Commission review pursuant to Type III review procedures. Because this activity requires design review, all associated reviews (in this case, site plan approval) are also subject to Planning Commission review, pursuant to DC §17.1.205.

An incomplete application was submitted on October 23, 2024. It was deemed complete by the City on April 9**,** 2025.

Public notice for this application was mailed to property owners and residents within 300 feet of the site on May 12**,** 2025 as required by DC §17.1.610. Notice of this request was also provided to the applicant, and published in the *News-Times* on May, 22, 2025.

Comments and conditions received from the Plans Review Board are listed in Exhibits B-C.

As of the writing of this report, no comments have been received from the public.

# II. PROJECT DESCRIPTION AND ANALYSIS

1. Description of Proposal: The proposal would result in the construction of 2 buildings housing 17 total apartment units- Building A with 9 units and Building B with 8 units.

    - All units within Building B will be four-bedroom units. Building A will have one studio unit intended for an onsite property manager, one two-bedroom unit, and seven four-bedroom units.
    - Each of the proposed buildings would be four stories in height (approximately 45 feet tall), and would have flat roofs.
    - The parking area would have a total of 17 on-site, surface parking spaces.
    - A single point of access is proposed along 23rd Avenue.
    - All units would have a patio.

    The site would be completely built out with this project. The applicant intends to construct the project in a single phase.

    Site Examination: The site is flat and totals 0.574 acres. It abuts 23rd Avenue- a designated collector street.

    The site is occupied by an automotive repair use, which has been removed. There are no trees on-site. A chain-link fence separates the site from abutting properties on all sides.

    The site is located across Main Street from Pacific University (approx. 200').

## Aerial Photo of Site and Vicinity




2. Existing Comprehensive Plan Designation and Zoning of Site and Area

| LOCATION | COMPREHENSIVE PLAN DESIGNATION | ZONE DISTRICT | LAND USE |
|---|---|---|---|
| Site | Community Commercial | Community Commercial (CC) | Vacant |
| North | High Density Residential/ Community Commercial | Residential High Density (RH)/ Community Commercial (CC) | Multi-family/ Vacant |
| South | High Density Residential | Residential High Density (RH) | Duplex |
| East | Community Commercial | Community Commercial (CC) | General Retail/ Single-family |
| West | High Density Residential | Residential High Density (RH) | Multi-family |

3. Site Design: The site plan consists of two buildings with a total of 17 units. Both buildings are accessed by a single driveway, which takes access from 23rd Avenue. Public improvements (curb, sidewalk, driveway approach) will be to city standards.

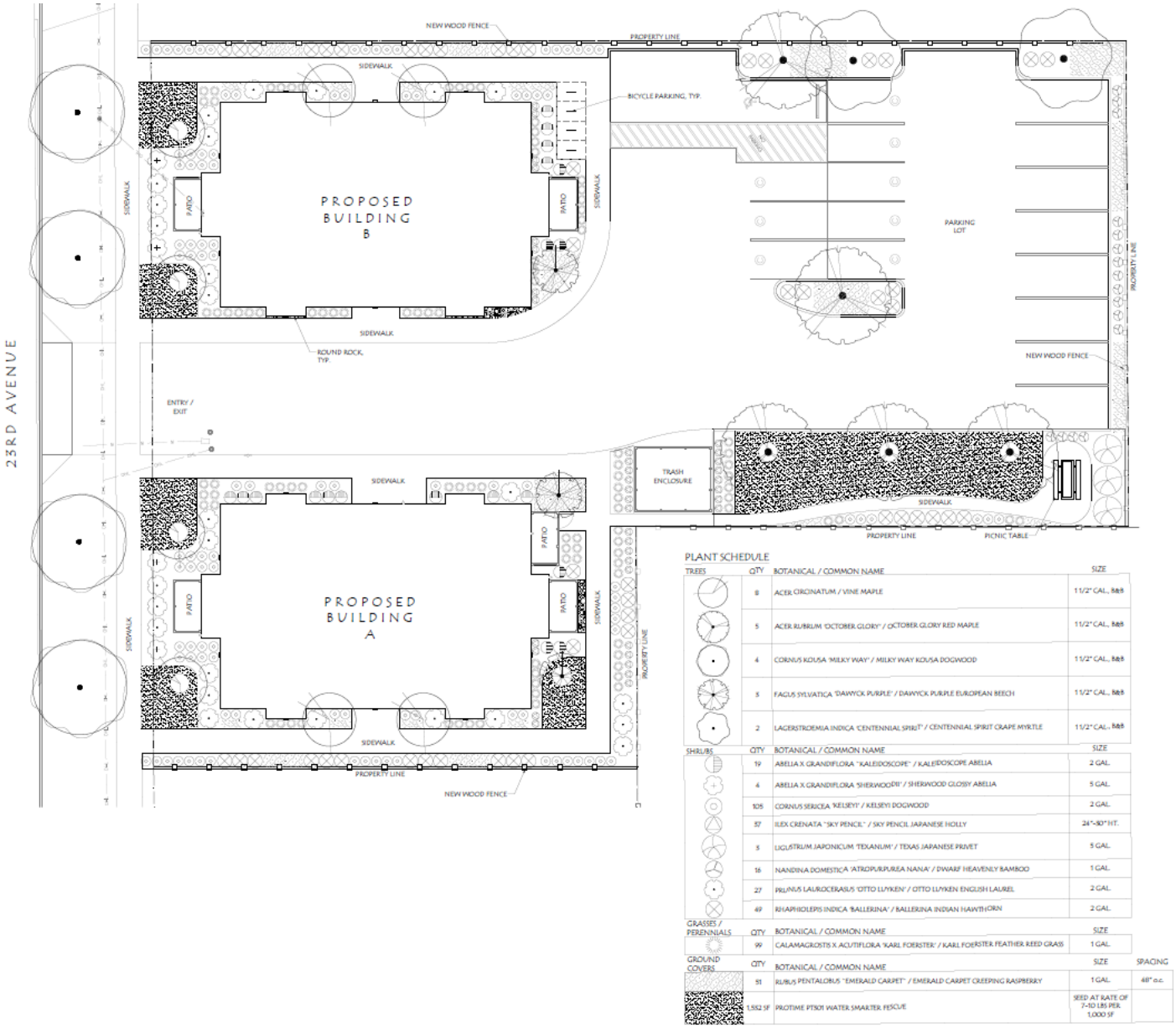
   Both buildings are proposed to be setback approximately 10 feet from the ROW. The side yard setbacks would be approximately 10 feet, and the rear yard setback would be over 16 feet for Building A, and over 117 feet for Building B.

   The areas surrounding and abutting each building would be landscaped. Access to both buildings would be provided by a 24-foot-wide driveway with multiple landscape islands provided throughout the site. New walkways would be installed along all

sides of each building, ultimately providing connections to the public sidewalk within 23rd Ave.

An underground detention facility is proposed under the parking lot, and the trash enclosure is proposed behind Building A.

**Site Plan (North ←)**



4. Setbacks and Height Requirements:

   - The site is located in the CC zoning district. Minimum setbacks in this district are 0 feet on all sides; however, buffer requirements will require each building to be set back from the rear and the sides (see compatibility analysis below)

   - The height limit in the CC zoning district is 45 feet. The height of the four-story apartment buildings would be 44 feet 6 ¾ inches at the roof peak.

   Summary and Conclusion: As the height of the proposed buildings would be less than the maximum allowed, and the proposed setbacks equal or exceed those required in the CC zoning district, staff concludes that the heights and setbacks are acceptable and no conditions of approval appear to be necessary.

5. Density: The site area is 0.574 acres. In the CC zoning district, the minimum density for a stand alone multi-family project is 16.22 dwelling units per acre, and the maximum density is 30 units per acre.

   Summary and Conclusion: The applicant proposes to develop the site with 17 units, meeting the maximum density allowed. This criterion is met.

6. Compatibility:

   - Buffering and screening are proposed and required by the Development Code. The applicant proposes "Option 2" within required "Combination C" of the "Buffer Combinations for Landscaping and Screening Table 8-3". Option 2 requires an 8-foot setback, trees every 15'-30' within the setback area, shrubs, and a minimum 5' tall fence.

     The proposal exceeds the fence requirement by providing a 6' tall fence; however, because of the proposed planting schedule, some required screening areas will require additional trees. Staff includes a condition of approval to provide a planting schedule per 17.8.425(B)(3)(a), specifically regarding the buffering and screening requirements.

   - Development of the site with an apartment complex might result in off-site noise impacts. However, if any noise issues did arise, City Code §91.030 et. seq. *Noise Regulations* would regulate the intensity of allowable noise in both daytime and evening hours. §91.034 *Maximum Permissible Sound Levels* caps the allowable volume in Noise Sensitive Areas (i.e., areas within residential and institutional zones) at 60 db during the daytime (7 a.m. to 10 p.m.) and 50 db at night (10 p.m. to 7 a.m.) Because the City has an existing ordinance in place to respond to potential complaints, staff concludes that there should be no significant neighborhood noise compatibility issues.

   - The project will be required to comply with DC §17.8.750 *Lighting Standards for Multi-Unit Development* and DC §17.8.755 *Pedestrian Lighting Standards.* Compliance with these provisions should minimize light encroachment onto adjacent properties.

Summary and Conclusion: The CC zoning district allows a range of residential uses and housing types when within the required density range. As multi-unit buildings are permitted use in the CC zoning district, and the abutting parcels are developed with a variety of residential uses and housing types, this project would be compatible.

7. Traffic Analysis and Street Improvements: The site abuts both 23rd Avenue:

   - 23rd Avenue is a designated Collector Street, and its width is fully dedicated. Street improvements will include new curb, sidewalk, and driveway approach to meet city standards.

   - According to the ITE *Trip Generation Report 11th Edition*, mid-rise apartments generate 6.63 Average Daily Trips (ADT) per unit. With 17 units, 113 trips per day would be expected.

     The actual number might be less since the site is a short distance from Pacific University, assuming some of the units are rented by students.

   Summary and Conclusion: Traffic access and street improvements would be met.

8. Pedestrian Walkways:

   - A 5-foot-wide concrete pedestrian walkway connecting to the public sidewalk is proposed along all sides of each building.

   Summary and Conclusion: the sidewalk and walkway connections would be constructed in compliance with City standards.

9. Parking:

   - Per recent State Rule Climate Friendly Equitable Community (CFEC) amendments, DC §17.8.515 Table 8-4 *Parking Requirements* regulates the minimum number of parking stalls required. There are no minimums for residential uses in "Parking Zone A"- which is defined as properties within 0.5 miles of a transit corridor. For multi-unit housing, the maximum parking allowed to be provided within Parking Zone A is 1.2 spaces per studio and 2.0 per non-studio. Overall, 17 on-site spaces would be provided- 1 space per unit.

   - Up to 50% of the spaces may be compact spaces (8'x16'). 8 compact spaces are proposed, therefore, meets this requirement.

   - There is no on-street parking allowed on 23rd Ave. On-street parking is allowed along the west side of A Street, and is also allowed on both sides of Main Street. Additionally, if units are occupied by a university student or staff member, a parking permit may be obtained and used for the "K-Lot", approximately 200 feet from the subject property.

   - The minimum number of bicycle parking is based on the required number of automobile parking spaces, not to be less than 2 spaces. The project proposes a total of 8 bicycle parking spaces.

Summary and Conclusion: As the minimum required onsite automobile parking spaces is zero, and the maximum onsite parking allowed is 33.2 spaces, This criterion is met. Additionally, Staff includes the condition regarding CFEC rules per § 17.8.535(I), that requires the provision of electrical service capacity to serve at least 40% of all vehicle parking spaces (7 spaces total).

10. Environmental Quality: There is no record of any prominent environmental conditions. Runoff from new impervious surfaces would be routed to a new on-site underground facility. Additional landscaping is proposed to be installed (see below) that may improve air quality and reduce glare and heat.

11. Open Space: Usable recreation areas are important in multi-unit developments to provide for recreational uses. These areas should be both usable and provide visual delight. All multi-unit development over 5 units shall provide usable recreation areas at a rate of 100 square feet per unit. The project proposes a 1700 sq ft landscaped and accessible picnic area behind Building A and adjacent to the parking lot.

    §17.8.205 requires that all multi-family dwellings with 20 or more units provide a children's play area, surrounded by a fence at least 30 inches high. Because this complex would have fewer than 20 units, these provisions do not apply.

12. Landscaping: Proposed landscaping would be varied and extensive, including varieties of trees, shrubs, and groundcovers. Landscaping appears to comply with the provisions of §17.8.205 and §17.8.545.

    Several trees are located off-site to the south but adjacent to the perimeter. Because of their proximity to the property line, tree protection measures are required, pursuant to §17.5.115(B). Any excavation authorized within the critical root zone (CRZ) of a protected tree must be performed by hand.

13. Public Utilities: The application has been reviewed by the Engineering, Fire, Light and Power, Police, and Public Works departments. All departments have indicated that existing public utilities to serve the site are adequate. Specific comments and conditions from the Engineering and Light & Power departments are listed in Exhibits B-C. The Police and Public Works departments registered no comments or conditions.

14. Solid Waste & Recycling: Per §17.7.305 The solid waste and recycling area must be a minimum of 85 sq ft for 17 multifamily units. The project proposes an area of 202 square feet. Therefore, this criterion is met.

15. Site Development Approval Criteria: §17.2.450 *Site Development Review Criteria* are as follows:

    The Planning Commission shall review and approve, conditionally approve, or deny the site development plan based on the following criteria:

    A. The site development plan complies with all applicable standards of the base zoning district, any overlay district, and the applicable general development standards of Article 8.

       Finding: The minimum and maximum residential density in the CC zoning district is 16.22 to 30.00 units, respectively. With 0.574 acres, the allowable maximum

density would therefore be 17 units. The project would include 17 units thus, the maximum density would be met.

Finding: Parking would be provided throughout the site, and all of the buildings are connected with a pedestrian walkway along 23rd Avenue.

Finding: The site is located in the CC zoning district. As the proposed building setbacks would equal or exceed the required setbacks, no conditions of approval appear necessary.

Finding: The height limit in the CC zoning district is 45 feet. The height of the 4-story apartment buildings would be 44 feet 6 ¾ inches at the roof peak. As the height of the proposed buildings would be less than the maximum, this criterion is satisfied.

Finding: The project would have 17 off-street spaces, 17 more than the minimum required.

Summary and Conclusion: The proposed density, setbacks, building heights, access and parking would all meet or exceed Development Code standards.

B. The site development plan addresses the development standards in Article 5 (Natural Resource Areas, Tree Protection and Historic Resources) when such resources are present on or directly adjacent to the development site.

Finding: The project does not have any historical or natural resources on site, and tree protection will be required for trees abutting the property.

# III. DESIGN GUIDELINES

Design Review Criteria: Projects subject to design review shall be evaluated based on the following:

A. The development standards of the applicable zoning district and any overlay district;
B. The general development standards of Article 8.
C. Departures from code requirements may be permitted as part of a Track 2 Design Review Process, when the following criteria are met:

1. The design guidelines contained in the applicable section of the "Design Guideline Handbook" are adequately addressed.
2. The applicant demonstrates that the overall development would result in a development that better meets the intent of the design guidelines than a design that simply meets the Code.

The Design Guideline Handbook Section III *Multi-Unit Residential Design Guidelines* has two options for design review: Track 1 *Development Standards* and Track 2 *Design Guidelines.*

There are no requests for departures from the code that triggers Track 2 review. The following analyzes the application as it relates to Track 1 standards:

**Site – Circulation**
- *Continuous pedestrian connections required* – This standard is met.
- *Pathways at least 10 feet from dwellings. The separation is measured from the pathway edge closest to any dwelling unit entry.* – This standard is met.
- *A minimum pathway width of 5 feet* – This standard is met.

**Site – Parking**
- *Include 18-foot-wide landscape planter bays in parking areas > 10,000 square feet* – The proposed parking lot and aisles would not exceed 10,000 square feet in area, therefore, this provision does not apply.
- *Sidewalk system shall connect all front doors to the parking lot* –this standard is met.

**Site – Pedestrian Environment**
- *Residential front doors shall be setback at least 2 feet from the public sidewalk* – This provision does not apply.
- *Residential porch height < 4 feet* – No porches are proposed; therefore, this provision does not apply.
- *Residences with entry porches: porches shall be not be less than 40 square feet* - No porches are proposed; therefore, this provision does not apply.
- *Residences shall not be < 4 feet below grade* – The new buildings will be erected at grade. This standard is met.

**Site – Screening / Service Areas**
- *All mechanical equipment shall be screened* – All mechanical equipment will meet the screening standard.
- *Service / refuse collection areas shall be not < 20 feet from the right-of-way* – The refuse collection area would be located approximately 130 feet from the 23rd Avenue right-of-way. This standard is met.

- *Refuse collection area to be screened from above* – The refuse collection area is indicated to be enclosed. This criterion is met.
- *All rooftop mechanical equipment shall be screened* – None proposed; not applicable.

**Site – Landscaping**

*At least 75% of required landscaped areas shall be planted; at most 25% of required landscaped areas shall be hardscaped* – This standard is met.

- *Buffering and Screening* – The development site abuts residential properties on all sides. Buffering or screening standards apply. This standard is met with staff's condition of approval.

**Site – Crime Prevention Through Environmental Design**

- *Plant materials by entries shall be < 5 feet in height by the entry* - Complies. This standard is met.
- *Window areas facing common spaces, paths, and parking areas shall be at least 25 square feet each* – This standard is met.
- *Entries shall be lighted* – All entries would be illuminated. This standard is met.
- *Gated residential areas are prohibited* – None are proposed.
- *Motion-activated lighting by the street is prohibited* – None are proposed.

**Site – Open Space**

- *At least 25% of the lot (excluding parking areas) shall be landscaped* –This standard is met.
- *Apartment complexes with five units or more shall provide 100 square feet of recreation space per unit* – This standard is met.
- *Apartment complexes with 20 or more units shall have a children's play area* – This provision does not apply.
- *At least 50 square feet of private open space shall be provided per unit* – This standard is met.
- *Private open space shall be separated from common open space with landscaping, fencing, or grade changes (including balconies)* – This standard is met.

**Building – Massing and Form**

- *On lots with an average cross slope of 15% or more, no more than 60% of the site shall be re-graded-* This standard is met.
- *Building dimensions > 150 feet shall have a minimum 3-foot off-set* – Buildings do not exceed 150 feet in length; therefore, this provision does not apply.
- *Every two dwelling units shall be off-set from the next by at least 4 feet* – This standard is met.
- *All habitable rooms shall have a window facing the car park and common areas* – This standard is met.

**Building – Compatibility**

- *All buildings shall have a defined entry space of at least 16 square feet* – This standard is met.

**Building – Safety**

- *Line-of-sight shall be maintained between the building entries and the sidewalk or car park* – This standard is met.

**Building – Privacy**

- *Building entries shall be at least 3 feet from sidewalks and walkways* – This standard is met.

- *Bedroom and bathroom windows shall be off-set at least 4 feet from windows on adjacent buildings (unless privacy glazing is used)* – This standard is met.

**Site – Lighting**

- *All unit entries and walkways shall be lighted* – This standard is met.
- *Light poles shall not exceed 18 feet in height* – No lightpoles are proposed, therefore, this standard does not apply.
- *Cut-off shields shall be installed* – This standard is met.
- *Plastic interior-lighted signs are prohibited* – This standard is met.

**Building - Signs**

- *Residential nameplates allowed* – Name plates will not exceed 1 & ½ sq ft.

Summary and Conclusions: The design standards have been addressed by the land use application and associated plans.

# IV. ALTERNATIVES

The Planning Commission may approve as submitted, approve with conditions, continue deliberations to a date certain, or deny this request.

# V. RECOMMENDATION

Based on the information provided in the application and Staff's findings above, Staff recommends approval of the application for site design and design review for the proposed 17-unit apartment complex at 1930 23rd Avenue, **with the following conditions:**

1. The applicant is bound to the project description and all representations made by the applicant during the application and decision-making proceeding.

2. The applicant shall comply with all applicable City building and development standards, including all dimensional standards and public works specifications.

3. Provide a planting schedule per 17.8.425(B)(3)(a)- Screening Requirements.

4. Provide adequate electrical service to support at least 40% of parking spaces per 17.8.535(I)

5. A lot consolidation or reciprocal access easement shall be required before final certificate of occupancy is issued.

6. The Engineering and Light & Power conditions attached (Exhibit B & C)

# VI. LIST OF EXHIBITS

The following exhibits were received, marked, and entered into the record as evidence for this application at the time this staff report was written. Exhibits received after the date of this report will be marked beginning with the next consecutive letter and will be entered into the record at the time the public hearing is opened, prior to oral testimony.

**Exhibit A** Site Plan and Design Review Application & Application Materials

**Exhibit B** Engineering Department Standards and Specifications

**Exhibit C** Light & Power Department Conditions of Approval

# LAND USE APPLICATION FOR PROJCT - 23RD AVE FOREST GROVE

ADDRESS: 1930 23RD AVE, FOREST GROVE, OR 97116

## DESIGN REVIEW

**Section 17.2.340 SUBMITTAL REQUIREMENTS**

Provided drawings:

- Site plan – Property
  - All existing and proposed walls and fences, including the location, height, type of design and composition.
  - An open space plan showing the locations and dimensions of common and private open space, including active and passive recreational areas.
- Topographic survey
- 3-D View of site
- Floor plans: Level 01-04 – ***Building A***
- Floor plans: Level 01-04 – ***Building B***
- Colored Elevations – ***Building A***
- Colored Elevations – ***Building B***

## SITE DEVELOPMENT REVIEW

**Section 17.2.440 SUBMITTAL REQUIREMENTS**

A. Boundaries of the development site, with lot line dimensions and land area in SF
   a. See Site plan *(A1.01)*
B. Boundaries of lots adjacent to the development site, with general locations of existing buildings and driveways and description of current land uses;
   a. See Site plan *(A1.01)*
C. Existing contours of the development site at two-foot intervals for slopes of less than 10% and at ten-foot intervals for slopes of more than 10%. Additional contour data may be required by the Director for slopes greater than 20%;
   a. See Topographic Survey Provided
D. Major existing physical and natural features such as perennial and intermittent streams, wooded areas, marshes, rock outcroppings and vegetative cover types
   a. N/A
E. Environmental resource areas subject to the provisions in § 17.8.305 and, where applicable, §§ 17.5.005 et seq. and environmental hazard areas subject to the requirements in § 17.8.310;
   a. N/A
F. Individual trees or groves of trees subject to the provisions of §§ 17.5.100 et seq.
   a. N/A

G. Historic Landmarks subject to the provisions of §§ 17.5.200 et seq.
    a. N/A
H. Location, dimensions and heights of existing and/or proposed structures, including area in square feet and designation of existing and/or proposed use
    a. See Site plan *(A1.01),* 3-D Site View *(G3.01),* and Floor Plans *(A1.21-A1.24)*
I. Setback dimensions from buildings to lot lines and lot coverage as a percentage of total lot size
    a. See Site plan *(A1.01)*
J. Location and dimensions of existing and/or proposed streets, driveways, transit facilities, sidewalks, trails, off-street parking and loading space, bicycle parking facilities, landscaped areas, recreation areas and trash storage areas
    a. See Site plan *(A1.01)*
K. Location of existing utilities and fire hydrants adjacent to the site, including the size of storm sewer, sanitary sewer and water lines
    a. See Civil Drawings
L. Location and names of public street, parks, utility rights-of-way and easements within or adjacent to the site
    a. See Site plan *(A1.01)*
    b. No easements
M. Location and types of proposed drainage, water and sewer facilities to serve the development
    a. See Civil Drawings
N. Elevation drawings of proposed buildings
    a. See Building Elevation Sheets *(A2.01)*
O. Landscape plan depicting existing and proposed trees, shrubs, groundcover, irrigation and architectural features such as fences or walls. Proposed plantings shall be designated as to species, quantities and size at time of planting
    a. See Landscape Plan
P. Location, character and dimensions of proposed signs and lighting
    a. N/A
Q. Locations and dimensions of all existing and proposed outdoor storage areas, including but not limited to trash storage and recycling areas.
    a. See Site plan *(A1.01)*

## ZONING ORDINANCE

### Section 17.3.310 LIST OF COMM. AND MIXED-USE ZONES

Per the City of Forest Groves Zoning map, this property is designated as zone *CC – Community Commercial,* which allows 30 dwelling units per acre maximum.

The project lot is 0.58 acres, allowing for a max number of 17 units on the lot.

The proposed design contains two multifamily buildings, with 17 units total.
***Building A*** contains 9 Units – One (1) studio, One (1) 2-Bedroom, and Seven (7) 4-bedroom
***Building B*** contains 8 Units – Eight (8) 4-Bedroom

### Section 17.3.320 USE REGULATIONS

Per Table 3-8, multi-family use is a permitted use in the *CC zone*.

### Section 17.3.330 COMMERCIAL AND MIXED-USE ZONE DEVELOPMENT STANDARDS

Per table 3-9 – *CC zone*

| STANDARD | CC REQ. | PROPOSED PROJ. | *SHEET REF. |
|---|---|---|---|
| Max. Use Size | None | N/A | *N/A* |
| Min. Lot Size | 5,000 SF MIN. | 25,184 SF | *A1.01* |
| Min Lot Width | 50'-0" MIN. | 150' -0" | *A1.01* |
| Min Lot Depth | None | 209'-3 ½" | *A1.01* |
| Min. Setbacks | - | - | - |
| - Front | None | N/A | *N/A* |
| - Interior side [2] | **Sec 17.8.425 D** – 8'-0" Min W/ Fence | 8'-0" W/ Fence | *G1.02 & A1.01* |
| - Corner (street side) | None | N/A | *N/A* |
| - Rear [2] | **Sec 17.8.425 D** – 8'-0" Min W/ Fence | 8'-0" W/ Fence | *A1.01* |
| Max Setback [3] | Street - 20'-7" Max | No Front Setback Required | *A1.01* |
| Max. Building Height | 45'-0" Max | 44'-6 ¾" | *A2.01-A2.04* |
| Min. Landscape Area | 15% of Site | 25% of Site | *A1.01* |

### Section 17.8.420 LANDSCAPE REQ. BY ZONE

*Landscaping required in the Community Commercial Zones.* A landscaped strip at least 10' in width shall be provided abutting any property line facing a street. The landscape strip shall be appropriately landscaped with ground cover, planted berm, shrubbery and/or trees.

**See Landscape Drawings for compliance with all Landscape standards.*

### Section 17.8.425 BUFFERING AND SCREENING STANDARDS.

Per **Table 8-2: Buffer Matrix Proposed Use** *Zone CC -Community Commercial* adjacent to multi-family residential properties of +5 Units requires buffering between the properties.

Per **Table 8-3 Buffer Combinations for Landscaping and Screening** designated by table 8-2, our project falls under requirement C – and meets Option 1.

| Min. Setback Width | Trees (per linear feet of buffer) | Shrubs or Groundcover | Screening |
|---|---|---|---|
| 8'-0" | 15' min/30' max spacing | Shrubs | 6'-0" Fence |

**See sheet A1.01 for compliance with buffering standards.*

## Section 17.8.510 GENERAL PROVISIONS

***G. Standards of measurement.*** Except as otherwise defined in this Code, "one standard parking space" means a parking stall of nine feet in width and 18 feet in length. To accommodate compact cars more efficiently, up to 50% of the available parking spaces may have a minimum dimension of eight feet in width and 16 feet in length so long as they are identified as compact car stalls and are not readily accessible to large cars. Head-in or angled parking spaces abutting walkways or landscape areas shall be shortened by one and one-half feet and the walkway or landscape area increased by the same measure. No wheel stops shall be required on these spaces.
**See sheet A1.01 for compliance with parking dimension standards.*

## Section 17.8.515 OFF STREET PARKING REQUIREMENTS

***B. Location of off-street parking.*** Off-street parking spaces for dwellings shall be located on the same lot with the dwelling. For all other uses, required off-street parking spaces shall be located not farther than 500 feet from the building or use they are required to serve, except as exempted in the Town Center zones.

***E. Minimum/maximum parking.*** Unless specified below or otherwise exempted by this Code, the minimum and maximum number of required parking spaces shall be provided for all uses in accordance with the specifications of Table 8-4.

| LAND USE | MIN. PARKING | MAX. PARKING | PROPOSED PROJECT |
|---|---|---|---|
| Multi-family Units (within Community Com.) | Assume 1.75/DU for 4 Bed Units.<br><br>28 Spaces Req. per Forest Grove* | None | 17 Spaces Provided |

**PARKING: Oregon Administrative Rule* 660-012-0430(2) "Reduction of Parking Mandates for Development Types" which identifies; cities within a metropolitan area that have not adopted land use regulations without parking mandates as provided in OAR 660-12-0405 through 660-012-0415, are subject to the following provision: *"Cities and counties may not require more than one parking space per unit in residential developments with more than one dwelling unit on a single legally-established property."*

1/DU → 17 units = 17 parking spaces required (17 spaces provided)
**See sheet A1.01 for compliance with parking Min/Max standards.*

## Section 17.8.540 BICYCLE PARKING

Per this section, bicycle parking is required for multifamily housing developments.
Bike parking minimum is equal to 20% of the required parking spaces for the designated use.

20% of 28 Parking Spaces = approx. 6 bike parking spaces required (14 spaces provided)

- *location and sizes meet all requirements indicated in section 17.8.540*
  **See Site Plan (A1.01) for compliance with bicycle parking standards.*

## Section 17.8.710 BUILDING DESIGN AND DEVELOPMENT STANDARDS

**Building design standards for multi-unit development**

1. **Massing and form**
    a. On lots with an average cross slope of 15% or more, no more than 60% of the site shall be re-graded.
        *i. N/A - See civil drawings for grading*
    b. No building shall have a dimension greater than 150 feet without a minimum three feet off-set of the exterior wall.
        *i. N/A Buildings do not exceed 72'-0" in length*
    c. At a minimum, every two dwelling units shall be offset from the next dwelling unit by at least four feet in depth.
        *i. N/A. Buildings do not contain more than two units side-by-side*
    d. All habitable rooms shall incorporate at least one window when facing parking lots and common areas.
        *i. All habitable rooms contain windows*
2. **Compatibility**
    a. All buildings shall incorporate a porch or architecturally defined entry space for each ground level dwelling unit with a minimum area of 16 square feet per dwelling unit, with no dimension less than four feet.
        *i. Ground floor unit doors meet min. sf entry space requirement*
    b. Shared porches or entry spaces are permitted. All grade level porches shall include hand-railing, half-walls or shrubs to define their outside perimeter.
        *i. Landscaping elements to define entry where applicable.*
3. **Privacy**
    a. Front entryways into dwelling units shall be separated vertically or horizontally a minimum of three feet from sidewalks used by more than one dwelling unit.
        *i. N/A*
    b. Bedroom and bathroom windows shall be offset a minimum of four feet from windows on adjacent buildings (unless window glazing is frosted, diffused or glass block)
        i. *Project meets requirement. Building set back +10'-0" from adjacent buildings in all directions*
4. **Building relationship with adjacent arterials**
    a. Buildings shall be setback at least ten feet from arterials.
        *i. Project meets requirement*
    b. Buildings shall be oriented away from arterials and no front or main entries shall be facing the arterials.
        *i. Project meets requirement*
    c. The setback area shall be landscaped consistent with the buffering requirements of **Section 17.8.425,** except that chain link fence shall not be allowed.
        *i. Project will meet requirement*

# DEV. GUIDELINE HANDBOOK – SECTION III ; MULTI-UNIT RES. FOCUSED AREA

## *SITE DESIGN GUIDELINES*

**INTENT** - Provide a functional and safe environment for vehicles and pedestrians.
Multi-unit development should be visual appealing from the adjacent street right-of-way and adjacent residential neighborhoods.

### SITE – CIRCULATION *Related Code Standards (§17.8.100)*

**Guideline** - Encourage aesthetically pleasing and functional site design, which minimizes vehicle, bicycle and pedestrian conflicts and creates a safe environment for all users.

**Description** – A functional vehicle circulation system should be emphasized, as well as pedestrian safety. Vehicle circulation and parking areas should be separated from pedestrian areas where possible.

- A continuous pedestrian connection shall be provided from the front door of all residential buildings to the public sidewalk.
    - *Meets Requirement - See Site plan (A1.01)*
- Separate pathways from dwellings a minimum distance of ten (10) feet. The separation is measured from the pathway edge closest to any dwelling unit.
    - *Meets Requirement – See Site plan (A1.01)*
- On-site pedestrian walkways are required to be a minimum width of five (5) feet connecting dwelling units to parking/open space/recreation areas.
    - *Meets Requirement - See Site plan (A1.01)*

### SITE – PARKING *Related Code Standards (§17.8.500)*

**Guideline** - Create parking areas which are efficient and function well for automobiles yet minimize the negative impact on buildings on site or in adjacent neighborhoods.

**Description** – Parking should be located to provide convenient and safe access to residential units while minimizing views from the street right-of-way and adjacent existing development. Landscaping or other well-designed screening devices should be used to buffer views of parking lots from street right-of-way and adjacent properties.

Note: In addition to the design standards below, all residential development will be required to meet the minimum parking requirements provide in (§17.8.500 see Table 8-4)
**PARKING: Oregon Administrative Rule* 660-012-0430(2) "Reduction of Parking Mandates for Development Types" which identifies; cities within a metropolitan area that have not adopted land use regulations without parking mandates as provided in OAR 660-12-0405 through 660-012-0415, are subject to the following provision: *"Cities and counties may not require more than one parking space per unit in residential developments with more than one dwelling unit on a single legally-established property."* 1/DU → 17 units = 17 parking spaces required (18 spaces provided)

- Separate physically and visually parking areas greater than 10,000 square feet in area with landscape planter bays at least eighteen feet in width. Individual parking areas may be connected by a driveway.
    - *N/A – parking areas do not exceed 10,000sf*
- The sidewalk system shall connect the front door of all residential buildings to parking area(s).
    - *Meets Requirement - See Site plan (A1.01)*

## SITE – PEDESTRIAN ENVIRONMENT *Related Code Standards (§ 17.8.140(A)(3)*

**Guideline** – Create safe, pleasant and active streets and public spaces.

**Description** – Pedestrian areas should be functional and inviting, providing the multi-unit residential development with amenities. These areas should enhance the feeling of community and increase the ability for neighbors to meet. Development of public courts, plazas and squares is encouraged.

- Residential doors that face a public right-of-way shall be setback a minimum of 3 feet from a public sidewalk plus any additional width needed to meet the minimum sidewalk requirements (where applicable).
    - *N/A – No doors facing public ROW*
- The following types of doors shall not provide the primary entrance into a dwelling unit: sliding glass or solid metal doors without glazing.
    - *Meets Requirement – All entry doors will meet standard*
- Residential stoops, porches or terraces shall be no higher than 4 feet above grade as measured at the adjacent right-of-way.
    - *N/A – entry porches not provided*
- Residences with entry porches or terraces shall have a minimum area of 40 square feet.
    - *N/A – entry porches not provided*
- Residential entries shall be no lower than 4 feet below grade as measured at adjacent right-of-way.
    - *N/A – entry porches not provided*

## SITE – SCREENING/SERVICE AREAS *Related Code Standards (§17.8.140)*

**Guideline** - Screen "objectionable views" from residential dwellings, adjacent properties and public rights-of-way.

**Description** – Residential developments should create a pleasant visual environment. One way to accomplish this is to screen views of loading areas, mechanical/electrical equipment and dumpster and recycling collection areas from both within the site and off-site.

- All mechanical equipment shall be screened from view by an opaque fence or solid landscape screen 8 feet high.
    - *Meets Requirement – All mech. equipment will meet screening standard*
- Service/refuse collection areas shall not be located within 20 feet of public rights-of-way.
    - *Meets Requirement – Trash enclosure located in parking lot approx. 130'-0"from public ROW*
- All development of two or more stories in height shall be required to provide screening of garbage collection and storage areas from the following.
  *Also see §17.7.205 - Size, Location and Access Standards for Storage Areas C) Design Standards 3) Sight-obscuring Fence*
    - *Meets Requirement – Trash enclosure fenced and placed in parking lot*
- All roof mounted mechanical equipment other than vents shall be screened from ground level view. The screening shall be as high as the height of the equipment and shall be integrated with the exterior building façade.
    - *Meets Requirement – All mech. equipment will meet screening standard*

## SITE – LANDSCAPING *Related Code Standards (§17.8.140)*

**Guideline** – Use landscaping to enhance character and visual quality of residential developments.

**Description** – Landscaping can help provide a quality environment for residents and help achieve compatibility with surrounding land uses. A mix of landscaping treatments and techniques can provide appropriate separation between adjacent properties, screen objectionable views, provide visual relief, and create weather protection.

- Landscaping standards vary depending on zoning, use, adjacent zoning, and existing site conditions.
- At least 75% of required landscaped area shall be planted with any suitable combination of trees, shrubs, or evergreen ground cover.
    - *Meets Requirement – See Landscape Drawings*
- A maximum of 25 % of required landscaped area may include architectural features or artificial ground covers such as sculptures, benches, masonry or stone walls, rock groupings, decorative hard paving and gravel areas interspersed with planting areas.
    - *Meets Requirement – See Landscape Drawings*
- Buffering and screening is required as specified in §17.8.425.
    - *Meets Requirement – See Landscape Drawings*

## SITE – CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

**Guideline** – Consider crime prevention and the safety of residents in site design and use of landscaping.

**Description** – Crime prevention through environmental design is a proven concept that has been used to enhance the safety of residents and address the crime problem that afflicts many communities by ensuring that the right type of landscaping is used.
The conspicuous presence of people increases surveillance, which discourages criminals. More people outdoors means that threatening behavior is more likely to be observed. At the same time, potential criminals' sense that they are being noticed and watched. The green and groomed appearance of an apartment building is itself a cue that residents and owners care about a property, and watch over it and each other.

- No landscaping, fences, walls or plant materials greater than 5 feet in height shall be installed which obstruct the visibility of a dwelling entry from a public street.
    - *Meets Requirement – See Landscape Drawings*
- A minimum of 25 square feet of window area shall be provided within each dwelling unit facing a common open space, pedestrian path or parking lot to allow visual surveillance.
    - *Meets Requirement – See Building Elevations (A2.01-A2.04)*
- Lighting shall be provided at all exterior dwelling unit entrances.
    - *Meets Requirement – See exterior lighting outlined on Site Plan (A1.01) and Building Elevations (A2.01)*
- Guard or a keyed variation of gated residential development is prohibited.
    - *Meets Requirement – No gate in project*
- Motion activated security lighting is prohibited along public rights-of-way.
    - *Meets Requirement – No motion activated lighting in project*

### SITE – OPEN SPACE

**Guideline** – Provide accessible and usable open space for all residents of multi-unit developments.

**Description** – Open space is important in multi-unit developments to provide for active and passive recreational uses. Open space should be both usable and provide visual delight. The protection and integration of natural resources should be fostered.

- All multi-unit developments shall provide 25% of the lot area in open space (excluding area designated within parking areas). All designated open space shall be landscaped and maintained. Indoor or covered recreation space shall count towards meeting this requirement.
    - *Meets Requirement – See Site Plan (A1.01) Open space Legend*
- All multi-unit development over 5 units shall provide usable recreation areas at a rate of 100 square feet per units with a minimum dimension of 20 feet.
    - *Meets Requirement – See Site Plan (A1.01) Open space Legend*
- All multi-unit developments over twenty (20) units shall provide children's play area(s). Install a fence a minimum of thirty (30) inches in height to separate a parking lot, street, or driveway from any children's play area.
    - *N/A – Project does not exceed 20 units (17 units in total)*
- A minimum of 50 square feet of private open shall be provided with a minimum dimension of 6 feet. Private open space shall be directly accessible from unit.
    - *Meets Requirement – See Site Plan (A1.01) and Floor Plans (A1.21-A1.24)*
- Private open space shall be separated from common open space through the use of perimeter landscaping, fencing or a change in vertical grade (e.g., second floor balconies).
    - *Meets Requirement – See Site Plan (A1.01)*

## *BUILDING GUIDELINES*

**INTENT** – Promote building elements that unify the residential neighborhoods and reinforce the character of Forest Grove.

### BUILDING – MASSING AND FORM

**Guideline** – The bulk and character of structures should enhance the public realm and be cohesive with adjacent homes or businesses. Buildings should be designed to relate to human scale.

**Description** – Multi-unit buildings should be harmonious with existing Forest Grove neighborhoods. In cases where new multi-unit structures will be larger than structures on adjacent properties, the new buildings should be designed so that they do not overwhelm, create discordance or contrast dramatically.

- On lots with an average cross slope of 15% or more, no more than 60%of the site shall be re-graded.
    - *Meets Requirement – See Civil*
- No building shall have a dimension greater than one-hundred and fifty (150) feet without a minimum three (3) feet off-set of the exterior wall.
    - *Meets Requirement – See Floor Plans (A1.21-A1.24) and Site Plan (A1.01)*
    - *Buildings do not exceed 150'-0" in length*
- At a minimum, every two dwelling units shall be offset from the next dwelling unit by at least four (4) feet in depth.
    - *Meets Requirement – See Floor Plans (A1.21-A1.24)*
    - *Units separated by stairwell and no more than 2 dwelling units are placed together*

- All habitable room shall incorporate at least one window when facing parking lots and common areas.
    - *Meets Requirement – See Floor Plans (A1.21-A1.24) and Building Elevations (A2.01-A2.04)*

## BUILDING – COMPATIBILITY

**Guideline** - Encourage design which provides visual linkages between proposed development and adjoining existing buildings.

**Description** - Much of the land zoned for multi-unit development is currently occupied by single-family homes. New multi-unit development should "fit" by relating to surrounding architecture through use of common elements of scale, color, rhythm and proportion in similar ways as existing buildings.

- Setback requirements vary by building height (see §17.3.130 Table 3-7)
    - *Meets Requirement – See table above under section 17.3.330; table 3-9, and section 17.8.425*
- All buildings shall incorporate a porch or architecturally defined entry space for each ground level dwelling unit with a minimum area of 16 square feet per dwelling unit, with no dimension less than 4 feet. Shared porches or entry spaces are permitted. All grade level porches shall include hand-railing, half-walls, or shrubs to define their outside perimeter.
    - *Meets Requirement – See Floor Plans (A1.21-A1.24) and Site Plan (A1.01)*

## BUILDING – SAFETY

**Guideline** – Create development which provides a safe environment for all users.

**Description** – Residents and visitors need to feel secure yet welcome throughout multi-unit residential developments. This can be accomplished through building design and lighting that provide security without creating a fortress.

- A clear line of site between all front building entries and the public sidewalk or parking areas shall be maintained.
    - *Meets Requirement – See Floor Plans (A1.21-A1.24) and Site Plan (A1.01)*

## BUILDING – PRIVACY

**Guideline** – Ensure that the essential privacy needs of residents is provided for while simultaneously maintaining the sense of communal interaction, contact and relationship that creates or strengthens a neighborhood.

**Description** – A successful residential development balances and achieves its people's needs for essential privacy with their desires for differing degrees of community interaction. The relationship of a residence to the public realm is often confused: either the dwelling is exposed tentatively to the street, parking lot or neighbor and there is no privacy; or the dwelling turns its back to the street, open space or neighbor and communion with the district is lost. New development should strive to support both needs.

- Front entryways into dwelling units shall be separated vertically or horizontally a minimum of three feet from sidewalks used by more than one dwelling unit.
    - *Meets Requirement – See Floor Plans (A1.21-A1.24) and Site Plan (A1.01)*

- Bedroom and bathroom windows shall be offset a minimum of four (4) feet from windows on adjacent buildings (unless window glazing is frosted, diffused or glass block).
    - *Meets Requirement – See Floor Plans (A1.21-A1.24) for window locations and see Site Plan (A1.01) for building separation distances*

## *LIGHTING GUIDELINES*

**INTENT** – Lighting should provide security in residential areas and highlight building and landscape features. Utilitarian lighting creating excessive glare and spilling over onto adjacent properties is discouraged.

### SITE LIGHTING

**Guideline** – Lighting should be attractive, uniform in appearance and help provide a safe environment.

**Description** – Lighting should be used in parking areas to improve visibility and create a safe environment; along pedestrian routes to ensure visibility and used to highlight building and landscape features.

- All exterior dwelling unit entrances and pedestrian walkways shall be lighted.
    - *Meets Requirement – See Building Elevations (A2.01 ALT) and Site Plan (A1.01)*
- Poles outside of the public right-of-way shall be a maximum of 14 feet in height.
    - *Meets Requirement – No poles outside of public ROW in project*
- Light fixture bases taller than 8 inches are prohibited.
    - *Meets Requirement – No Light fixtures with bases taller than 8 inches*
- Area lighting shall be directed downward with no splay of light off the site. Any light source over ten (10) feet high shall incorporate cut-off shield.
    - *Meets Requirement – See Building Elevations (A2.01-A2.04)*
- Plastic signs with an internal light source are prohibited.
    - *Meets Requirement – No signage with internal light shall be used*

## *SIGN GUIDELINES*

**INTENT –** Signs should be architecturally compatible and contribute to the visual quality of residential neighborhoods. A consistent application of signs is important to create a pleasing visual environment while allowing for flexibility and creativity. Appropriately designed signs can reinforce the character of Forest Grove.

### SIGNS

**Guideline** - Signs should be designed with the purpose of providing relevant information and accenting the visual quality of the building.

**Description** – Use high quality signs made of durable materials and designed to be consistent with and enhance the character of Forest Grove.

- Residential nameplates identifying the occupant therein provided said sign does not exceed one and one-half (1 ½) square feet.
    - *Meets Requirement – Nameplates will meet guidelines above*




1 OVERALL SITE VIEW

0' 2' 4' 8' 16' 24'

# SITE DEVELOPMENT CODE REVIEW:

**PROJECT NAME:** FOREST GROVE APARTMENTS

**ADDRESS:** 1930 23rd Ave,
Forest Grove, OR 97116

**LOT SIZE:** 25,035.16 sf = 0.574 ac

**ZONING:** CC – *Community Commercial*
MULTI FAMILY PERMITTED PER SECTION 17.3.320; TABLE 3-8

**MAX DWELLING UNITS:** 30du/ac = 17 Units Max

**TOTAL UNITS:** 17 Units

**BUILDING A:**
9 UNITS TOTAL - (1) Studio; (1) 2-Bedroom; (7) 4-Bedroom
- LEVEL 01: 2,874 sf
- LEVEL 02: 2,874 sf
- LEVEL 03: 2,874 sf
- LEVEL 04: 2,874 sf

**BUILDING B:**
8 UNITS TOTAL - (8) 4-Bedroom
- LEVEL 01: 2,874 sf
- LEVEL 02: 2,874 sf
- LEVEL 03: 2,874 sf
- LEVEL 04: 2,874 sf

| STANDARD | ZONE CC REQUIREMENTS | PROPOSED PROJECT |
|---|---|---|
| MAX USE SIZE | NONE | N/A |
| MAX LOT SIZE | 5,000 SF MIN | 25,184 SF |
| MAX LOT WIDTH | 50'-0" MIN | 150'-0" |
| MAX LOT DEPTH | NONE | 209'-3 ½" |
| MIN SETBACKS | | |
| - FRONT | NONE | NONE |
| - INTERIOR SIDE [2] | **SEC 17.8.425 D** 8'-0" MIN. W/ FENCE | 8'-0" W/ FENCE |
| - CORNER (STREET) | NONE | NONE |
| - REAR [2] | **SEC 17.8.425 D** 8'-0" MIN. W/ FENCE | 8'-0" W/ FENCE |
| MAX SETBACKS [3] | STREET - 20'-7" MAX | NO FRONT SETBACK REQ. |
| MAX BLDG HEIGHT | 45'-0" | 44'-6 ¾" |
| MIN. LANDSCAPE AREA | 15% OF SITE | 25% OF SITE |

**LANDSCAPE BUFFERING REQUIREMENTS:**
SECTION 17.8.425 **TABLE 8-2: BUFFER MATRIX PROPOSED USE**
*ZONE CC -COMMUNITY COMMERCIAL* ADJACENT TO MULTI-FAMILY RESIDENTIAL PROPERTIES OF +5 UNITS REQUIRES BUFFERING BETWEEN THE PROPERTIES.

SECTION 17.8.425 **TABLE 8-3 BUFFER COMBINATIONS FOR LANDSCAPING AND SCREENING** DESIGNATED BY TABLE 8-2, OUR PROJECT FALLS UNDER REQUIREMENT C – AND MEETS OPTION 1:
- 8'-0" MIN SETBACK REQUIRED WHERE SITE ABUTS A RES. ZONE
- 15' MIN/30' MAX SPACING OF TREES REQUIRED
- SHRUBS REQUIRED
- 6'-0" FENCE REQUIRED (6'-0" FENCE PROVIDED)

**VEHICLE PARKING STANDARDS:**

STANDARD PARKING SPACE SIZE:
9'-0" IN WIDTH AND 18'-0" IN LENGTH
MIN AISLE WIDTH OF 23'-0"

STANDARD COMPACT PARKING SPACE:
UP TO 50% OF PARKING ALLOWED TO BE COMPACT
MIN DIMENSION OF 8'-0" IN WIDTH AND 16'-0" IN LENGTH

OFF STREET PARKING REQUIRED PER **SECTION17.8.515**

MIN/MAX PARKING REQUIREMENTS:

***PARKING: OREGON ADMINISTRATIVE RULE** 660-012-0430(2)*
"REDUCTION OF PARKING MANDATES FOR DEVELOPMENT TYPES" WHICH IDENTIFIES; CITIES WITHIN A METROPOLITAN AREA THAT HAVE NOT ADOPTED LAND USE REGULATIONS WITHOUT PARKING MANDATES AS PROVIDED IN OAR 660-12-0405 THROUGH 660-012-0415, ARE SUBJECT TO THE FOLLOWING PROVISION:
*"CITIES AND COUNTIES MAY NOT REQUIRE MORE THAN ONE PARKING SPACE PER UNIT IN RESIDENTIAL DEVELOPMENTS WITH MORE THAN ONE DWELLING UNIT ON A SINGLE LEGALLY-ESTABLISHED PROPERTY."*

PER REQUIREMENT: 1 PARKING SPACE PER DWELLING UNIT

- 17 UNITS = 17 PARKING SPACES REQUIRED
(17 SPACES PROVIDED)

- REGULAR = 9 SPACES
- COMPACT = 8 SPACES

**BICYCLE PARKING STANDARDS:**
BIKE PARKING REQUIRED PER **SECTION17.8.540**

BIKE PARKING MINIMUM
20% OF THE REQUIRED PARKING SPACES FOR THE DESIGNATED USE.

20% OF 17 PARKING SPACES = APPROX. 4 BIKE PARKING SPACES REQUIRED (4 SPACES PROVIDED)

LOCATION AND SIZES MEET ALL REQUIREMENTS INDICATED IN **SECTION 17.8.540**

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

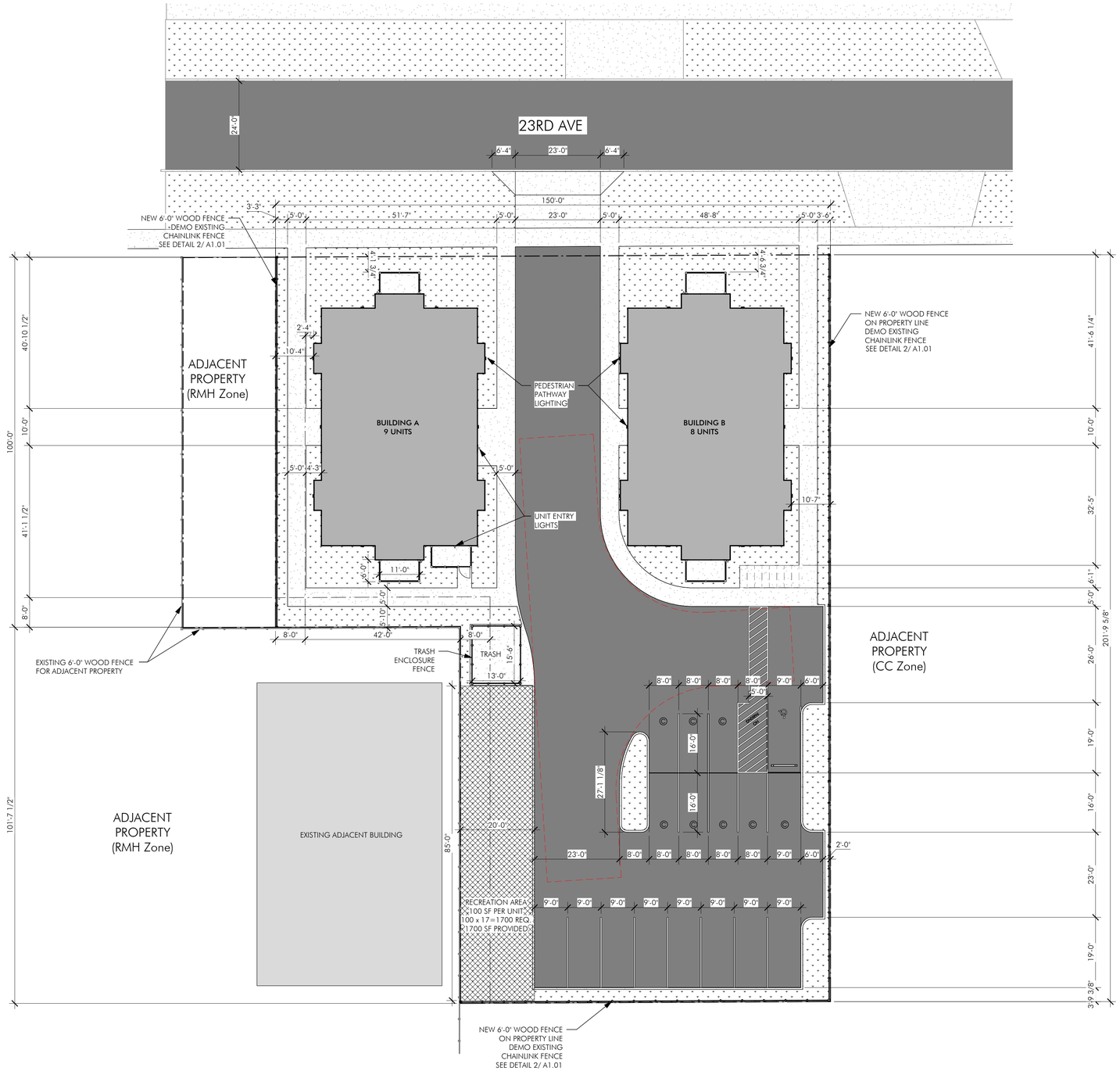
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
**G3.01**

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.



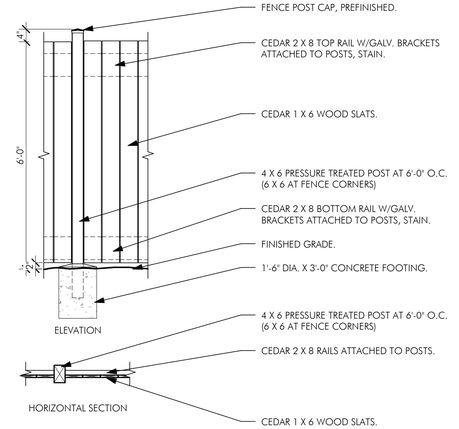

1 SITE PLAN
0' 4' 8' 12' 16' 24' 32'
1/16" = 1'-0"

## SITE CALCULATIONS AND LEGEND:

| SITE ELEMENT DESCRIPTION: | LEGEND: | AREA: (sf) | PERCENTAGE: (%) |
|---|---|---|---|
| BUILDINGS: | | 4,913.68 sf | 20 % |
| LANDSCAPING: | | 6,188.78 sf | 25 % |
| ASPHALT PARKING PAVING: | | 9,862.46 sf | 39 % |
| CONCRETE PAVING & CURBS: | | 4,237.16 sf | 16 % |
| TOTALS: | | 25,202.08 sf | 100.0 % |

## OPEN SPACE:

| SITE ELEMENT DESCRIPTION: | AREA: (sf) | PERCENTAGE: (%) |
|---|---|---|
| TOTAL OPEN SPACE: | 6,188.78 sf | 25 % OF SITE |
| - RECREATION AREA | 1,700.00 sf | 27 % OF OPEN SPACE |




2 WOOD FENCE
0' 1' 2' 4' 6'
1/2" = 1'-0"

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

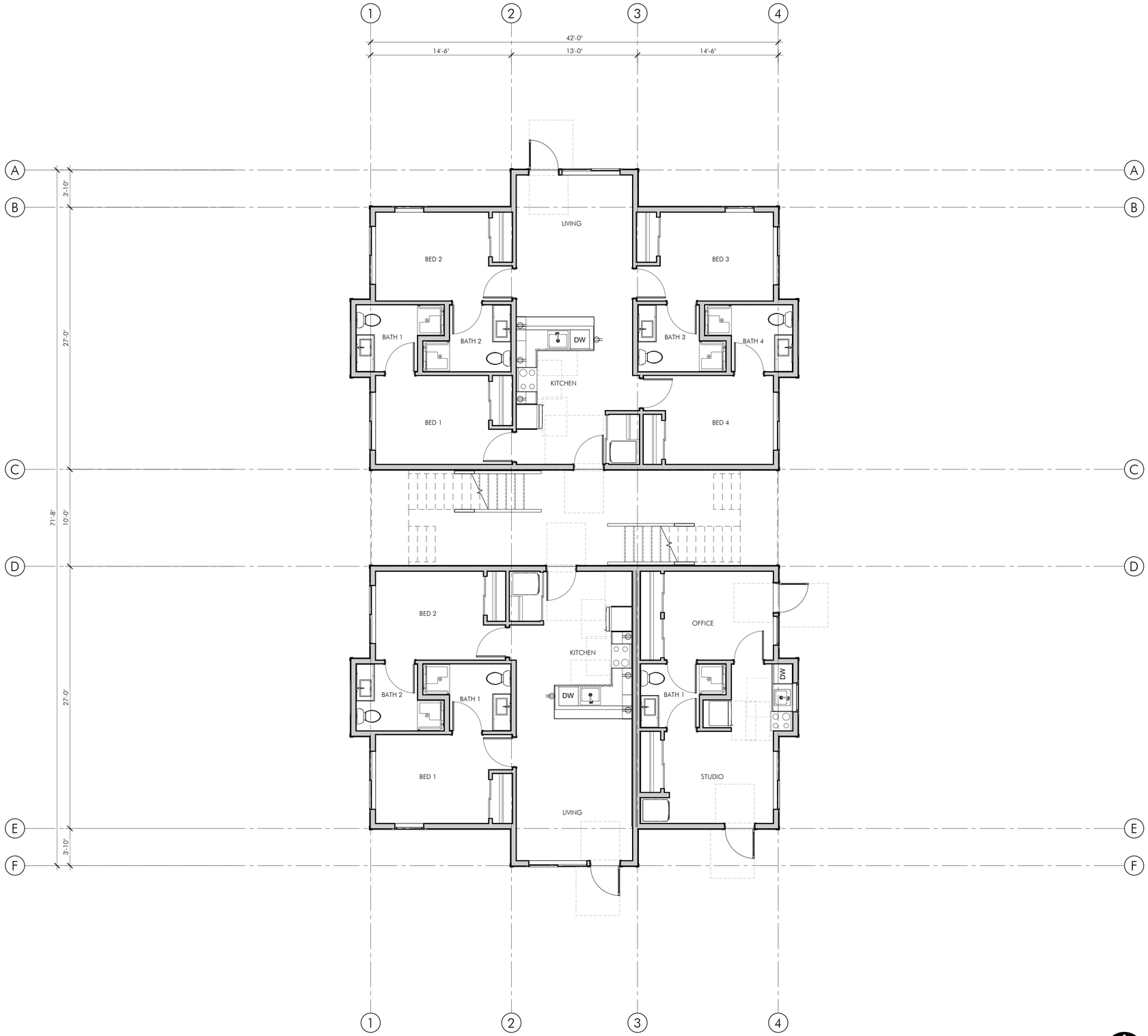
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
**A1.01**

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.




1 LEVEL 01 - FLOOR PLAN ALT

0' 2' 4' 6' 8' 10' 16'

3/16" = 1'-0"

## GENERAL PLAN NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED. NOTIFY ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY. OBTAIN CLARIFICATION OF DIMENSIONS OR DISCREPANCIES PRIOR TO PROCEEDING WITH AREA OF REQUIRED WORK.
3. DIMENSIONS ARE TO FACE OF FRAMING. DIMENSIONS STATED AS CLEAR ARE TO FACE OF FINISH.
4. SEE WALL SECTIONS FOR DESCRIPTION OF EXTERIOR WALL MATERIALS.
5. ALL INTERIOR PARTITIONS TO RECEIVE GLASS FIBER INSULATION, FULL HEIGHT.
6. COORDINATE LOCATION OF RECESSED OR SEMI-RECESSED ITEMS TO AVOID BACK TO BACK INSTALLATION AND TO REDUCE NOISE TRANSFER THROUGH PARTITIONS.
7. INSTALL WALL BACKING FOR ALL WALL MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: DOOR STOPS, FIXTURES, WALL CABINETS, SHELVING, COUNTERS, TOILET ACCESSORIES, SECURITY EQUIPMENT, TACK BOARDS AND MARKER BOARDS, HAND RAILS AND WINDOW COVERING TRACKS.
8. SEPARATE AREAS IN WHICH WORK IS BEING CONDUCTED FROM OTHER AREAS THAT ARE STILL OCCUPIED.
   A. PROVIDE, ERECT, AND MAINTAIN TEMPORARY DUSTPROOF PARTITIONS OF SUITABLE CONSTRUCTION IN LOCATIONS INDICATED ON DRAWINGS OR AS DIRECTED.
9. PROTECT EXISTING WORK TO REMAIN.
   A. PREVENT MOVEMENT OF STRUCTURE; PROVIDE SHORING AND BRACING IF NECESSARY.
   B. PERFORM CUTTING TO ACCOMPLISH REMOVALS NEATLY AND AS SPECIFIED FOR CUTTING NEW WORK.
   C. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING REMOVAL WORK.
   D. PATCH AS SPECIFIED FOR PATCHING NEW WORK.
10. REMOVE DEBRIS, JUNK, AND TRASH FROM SITE.
11. REMOVE FROM SITE ALL MATERIALS NOT TO BE REUSED ON SITE; DO NOT BURN OR BURY.
12. LEAVE SITE IN CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
13. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE LANDS.
14. WORK SHOWN ON THESE DRAWINGS IS TO BE SUPPLIED, FURNISHED, CONSTRUCTED, INSTALLED ALL AS PER THE GENERAL CONDITIONS AND THE SPECIFICATIONS: EXCEPTIONS AS DESCRIBED BY THE FOLLOWING ABBREVIATIONS:
   A. OFCI CONTRACTOR FURNISHED - CONTRACTOR INSTALLED.
   B. OFCI OWNER FURNISHED - CONTRACTOR INSTALLED.
   C. OFOI OWNER FURNISHED - OWNER INSTALLED.
   D. NIC OR N.I.C. NOT IN CONTRACT OR NOT A PART OF THIS CONTRACT.

## PLAN LEGEND:

## FLOOR PLAN NOTES:

1 SAMPLE PLAN NOTE

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

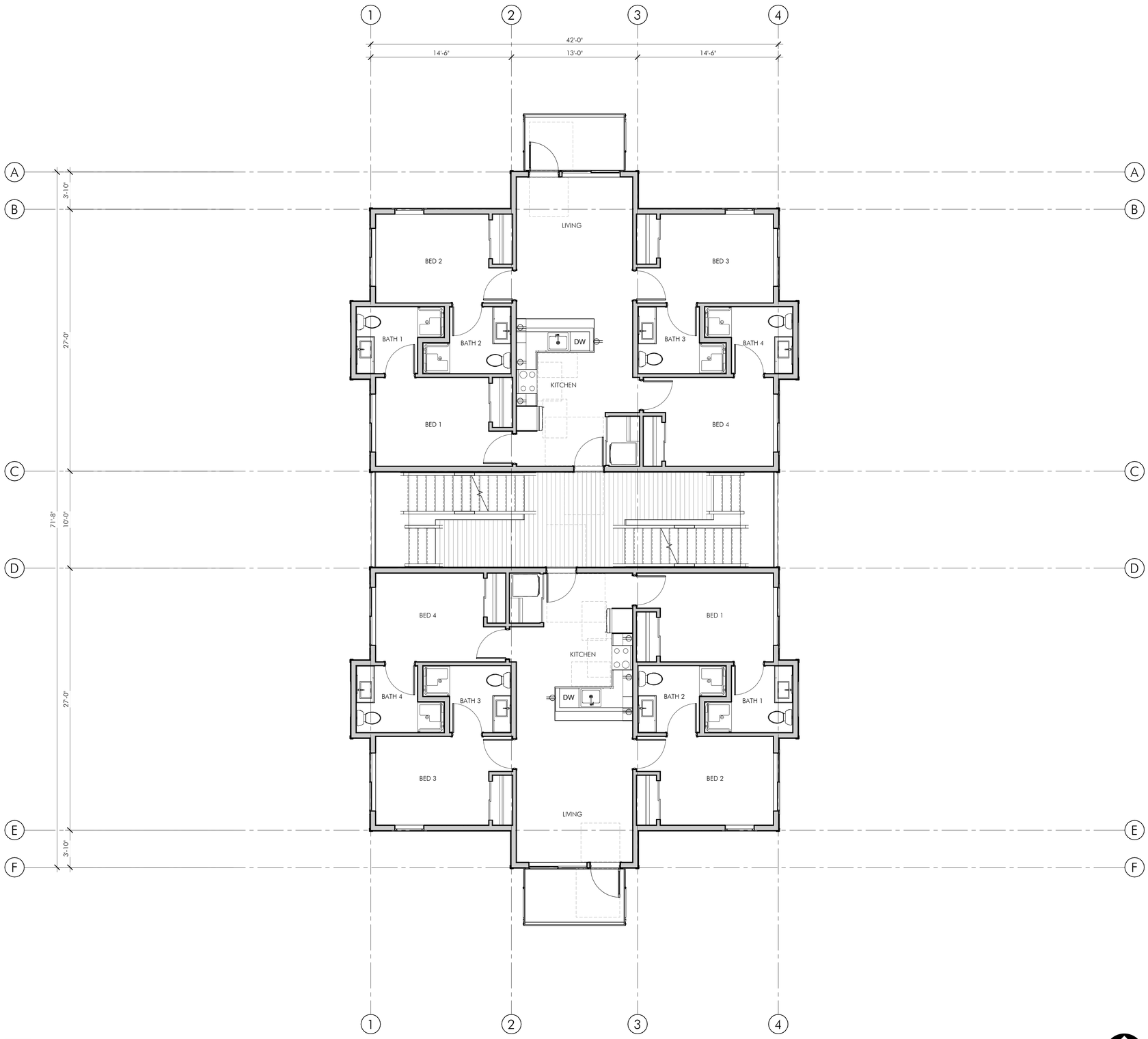
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A1.21
A

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.




1 LEVEL 02 - FLOOR PLAN

0' 2' 4' 6' 8' 10' 16'

3/16" = 1'-0"

## GENERAL PLAN NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED. NOTIFY ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY. OBTAIN CLARIFICATION OF DIMENSIONS OR DISCREPANCIES PRIOR TO PROCEEDING WITH AREA OF REQUIRED WORK.
3. DIMENSIONS ARE TO FACE OF FRAMING. DIMENSIONS STATED AS CLEAR ARE TO FACE OF FINISH.
4. SEE WALL SECTIONS FOR DESCRIPTION OF EXTERIOR WALL MATERIALS.
5. ALL INTERIOR PARTITIONS TO RECEIVE GLASS FIBER INSULATION, FULL HEIGHT.
6. COORDINATE LOCATION OF RECESSED OR SEMI-RECESSED ITEMS TO AVOID BACK TO BACK INSTALLATION AND TO REDUCE NOISE TRANSFER THROUGH PARTITIONS.
7. INSTALL WALL BACKING FOR ALL WALL MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: DOOR STOPS, FIXTURES, WALL CABINETS, SHELVING, COUNTERS, TOILET ACCESSORIES, SECURITY EQUIPMENT, TACK BOARDS AND MARKER BOARDS, HAND RAILS AND WINDOW COVERING TRACKS.
8. SEPARATE AREAS IN WHICH WORK IS BEING CONDUCTED FROM OTHER AREAS THAT ARE STILL OCCUPIED.
   A. PROVIDE, ERECT, AND MAINTAIN TEMPORARY DUSTPROOF PARTITIONS OF SUITABLE CONSTRUCTION IN LOCATIONS INDICATED ON DRAWINGS OR AS DIRECTED.
9. PROTECT EXISTING WORK TO REMAIN.
   A. PREVENT MOVEMENT OF STRUCTURE; PROVIDE SHORING AND BRACING IF NECESSARY.
   B. PERFORM CUTTING TO ACCOMPLISH REMOVALS NEATLY AND AS SPECIFIED FOR CUTTING NEW WORK.
   C. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING REMOVAL WORK.
   D. PATCH AS SPECIFIED FOR PATCHING NEW WORK.
10. REMOVE DEBRIS, JUNK, AND TRASH FROM SITE.
11. REMOVE FROM SITE ALL MATERIALS NOT TO BE REUSED ON SITE; DO NOT BURN OR BURY.
12. LEAVE SITE IN CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
13. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE LANDS.
14. WORK SHOWN ON THESE DRAWINGS IS TO BE SUPPLIED, FURNISHED, CONSTRUCTED, INSTALLED ALL AS PER THE GENERAL CONDITIONS AND THE SPECIFICATIONS: EXCEPTIONS AS DESCRIBED BY THE FOLLOWING ABBREVIATIONS:
   A. OFCI CONTRACTOR FURNISHED - CONTRACTOR INSTALLED.
   B. OFCI OWNER FURNISHED - CONTRACTOR INSTALLED.
   C. OFOI OWNER FURNISHED - OWNER INSTALLED.
   D. NIC OR N.I.C. NOT IN CONTRACT OR NOT A PART OF THIS CONTRACT.

## PLAN LEGEND:

## FLOOR PLAN NOTES:

1 SAMPLE PLAN NOTE

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

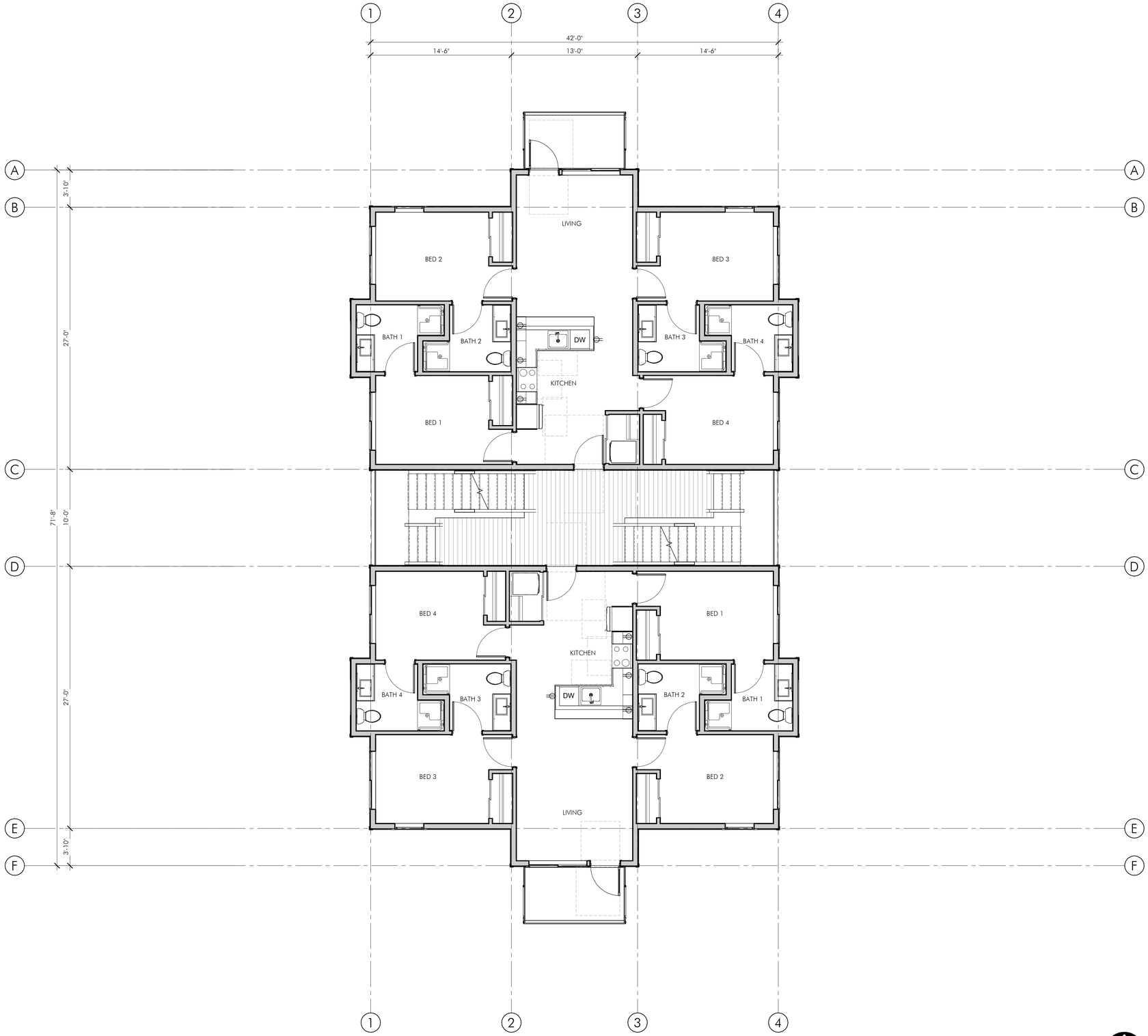
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A1.22
A

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.




1 LEVEL 03 - FLOOR PLAN

0' 2' 4' 6' 8' 10' 16'

3/16" = 1'-0"

N

## GENERAL PLAN NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED. NOTIFY ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY. OBTAIN CLARIFICATION OF DIMENSIONS OR DISCREPANCIES PRIOR TO PROCEEDING WITH AREA OF REQUIRED WORK.
3. DIMENSIONS ARE TO FACE OF FRAMING. DIMENSIONS STATED AS CLEAR ARE TO FACE OF FINISH.
4. SEE WALL SECTIONS FOR DESCRIPTION OF EXTERIOR WALL MATERIALS.
5. ALL INTERIOR PARTITIONS TO RECEIVE GLASS FIBER INSULATION, FULL HEIGHT.
6. COORDINATE LOCATION OF RECESSED OR SEMI-RECESSED ITEMS TO AVOID BACK TO BACK INSTALLATION AND TO REDUCE NOISE TRANSFER THROUGH PARTITIONS.
7. INSTALL WALL BACKING FOR ALL WALL MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: DOOR STOPS, FIXTURES, WALL CABINETS, SHELVING, COUNTERS, TOILET ACCESSORIES, SECURITY EQUIPMENT, TACK BOARDS AND MARKER BOARDS, HAND RAILS AND WINDOW COVERING TRACKS.
8. SEPARATE AREAS IN WHICH WORK IS BEING CONDUCTED FROM OTHER AREAS THAT ARE STILL OCCUPIED.
   A. PROVIDE, ERECT, AND MAINTAIN TEMPORARY DUSTPROOF PARTITIONS OF SUITABLE CONSTRUCTION IN LOCATIONS INDICATED ON DRAWINGS OR AS DIRECTED.
9. PROTECT EXISTING WORK TO REMAIN.
   A. PREVENT MOVEMENT OF STRUCTURE; PROVIDE SHORING AND BRACING IF NECESSARY.
   B. PERFORM CUTTING TO ACCOMPLISH REMOVALS NEATLY AND AS SPECIFIED FOR CUTTING NEW WORK.
   C. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING REMOVAL WORK.
   D. PATCH AS SPECIFIED FOR PATCHING NEW WORK.
10. REMOVE DEBRIS, JUNK, AND TRASH FROM SITE.
11. REMOVE FROM SITE ALL MATERIALS NOT TO BE REUSED ON SITE; DO NOT BURN OR BURY.
12. LEAVE SITE IN CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
13. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE LANDS.
14. WORK SHOWN ON THESE DRAWINGS IS TO BE SUPPLIED, FURNISHED, CONSTRUCTED, INSTALLED ALL AS PER THE GENERAL CONDITIONS AND THE SPECIFICATIONS: EXCEPTIONS AS DESCRIBED BY THE FOLLOWING ABBREVIATIONS:
   A. CFCI CONTRACTOR FURNISHED - CONTRACTOR INSTALLED.
   B. OFCI OWNER FURNISHED - CONTRACTOR INSTALLED.
   C. OFOI OWNER FURNISHED - OWNER INSTALLED.
   D. NIC OR N.I.C. NOT IN CONTRACT OR NOT A PART OF THIS CONTRACT.

## PLAN LEGEND:

## FLOOR PLAN NOTES:

1 SAMPLE PLAN NOTE

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

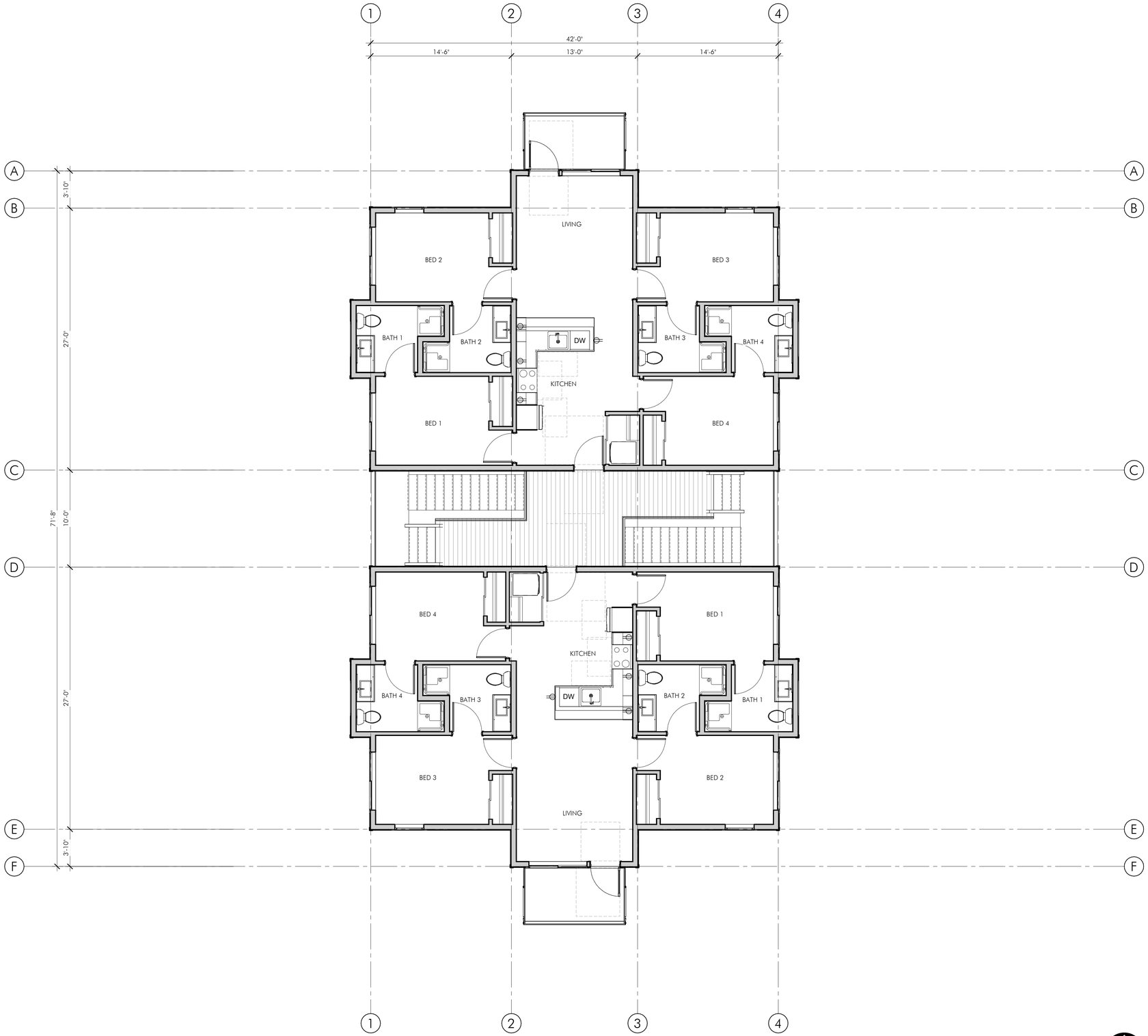
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A1.23
A

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.




1 LEVEL 04 FLOOR PLAN

0' 2' 4' 6' 8' 10' 16'

3/16" = 1'-0"

## GENERAL PLAN NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED. NOTIFY ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY. OBTAIN CLARIFICATION OF DIMENSIONS OR DISCREPANCIES PRIOR TO PROCEEDING WITH AREA OF REQUIRED WORK.
3. DIMENSIONS ARE TO FACE OF FRAMING. DIMENSIONS STATED AS CLEAR ARE TO FACE OF FINISH.
4. SEE WALL SECTIONS FOR DESCRIPTION OF EXTERIOR WALL MATERIALS.
5. ALL INTERIOR PARTITIONS TO RECEIVE GLASS FIBER INSULATION, FULL HEIGHT.
6. COORDINATE LOCATION OF RECESSED OR SEMI-RECESSED ITEMS TO AVOID BACK TO BACK INSTALLATION AND TO REDUCE NOISE TRANSFER THROUGH PARTITIONS.
7. INSTALL WALL BACKING FOR ALL WALL MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: DOOR STOPS, FIXTURES, WALL CABINETS, SHELVING, COUNTERS, TOILET ACCESSORIES, SECURITY EQUIPMENT, TACK BOARDS AND MARKER BOARDS, HAND RAILS AND WINDOW COVERING TRACKS.
8. SEPARATE AREAS IN WHICH WORK IS BEING CONDUCTED FROM OTHER AREAS THAT ARE STILL OCCUPIED.
   A. PROVIDE, ERECT, AND MAINTAIN TEMPORARY DUSTPROOF PARTITIONS OF SUITABLE CONSTRUCTION IN LOCATIONS INDICATED ON DRAWINGS OR AS DIRECTED.
9. PROTECT EXISTING WORK TO REMAIN.
   A. PREVENT MOVEMENT OF STRUCTURE; PROVIDE SHORING AND BRACING IF NECESSARY.
   B. PERFORM CUTTING TO ACCOMPLISH REMOVALS NEATLY AND AS SPECIFIED FOR CUTTING NEW WORK.
   C. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING REMOVAL WORK.
   D. PATCH AS SPECIFIED FOR PATCHING NEW WORK.
10. REMOVE DEBRIS, JUNK, AND TRASH FROM SITE.
11. REMOVE FROM SITE ALL MATERIALS NOT TO BE REUSED ON SITE; DO NOT BURN OR BURY.
12. LEAVE SITE IN CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
13. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE LANDS.
14. WORK SHOWN ON THESE DRAWINGS IS TO BE SUPPLIED, FURNISHED, CONSTRUCTED, INSTALLED ALL AS PER THE GENERAL CONDITIONS AND THE SPECIFICATIONS: EXCEPTIONS AS DESCRIBED BY THE FOLLOWING ABBREVIATIONS:
   A. OFCI CONTRACTOR FURNISHED - CONTRACTOR INSTALLED.
   B. OFCI OWNER FURNISHED - CONTRACTOR INSTALLED.
   C. OFOI OWNER FURNISHED - OWNER INSTALLED.
   D. NIC OR N.I.C. NOT IN CONTRACT OR NOT A PART OF THIS CONTRACT.

## PLAN LEGEND:

## FLOOR PLAN NOTES:

1 SAMPLE PLAN NOTE

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A1.24
A

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.




1 EAST ELEVATION ALT - MANAGER

0' 1' 2' 4' 8' 12'

1/4" = 1'-0"

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.

STUDIO 3
ARCHITECTURE
INCORPORATED

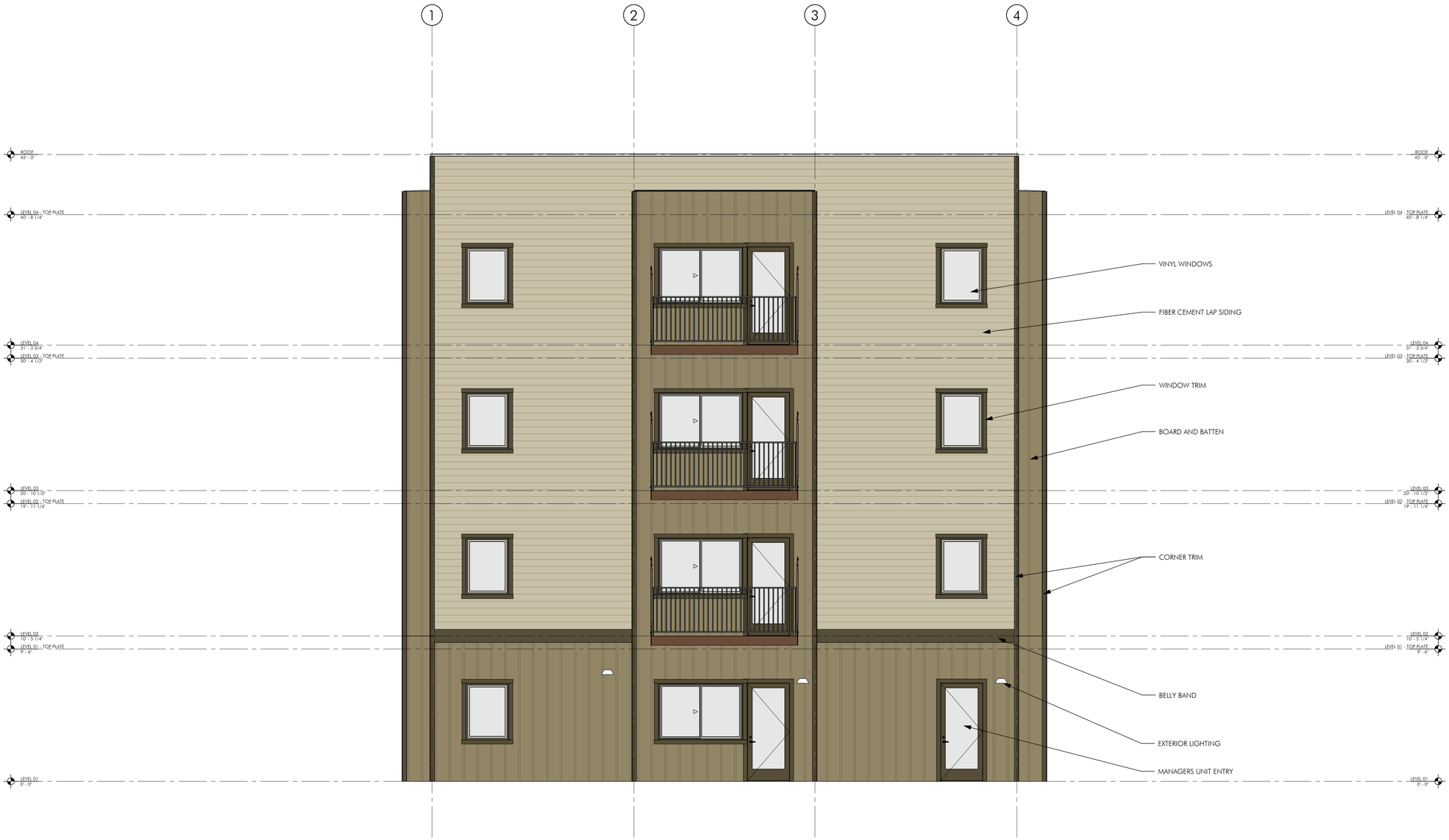
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A2.01
A




1 SOUTH ELEVATION ALT - MANAGER

0' 1' 2' 4' 8' 12'

1/4" = 1'-0"

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.

STUDIO 3
ARCHITECTURE
INCORPORATED

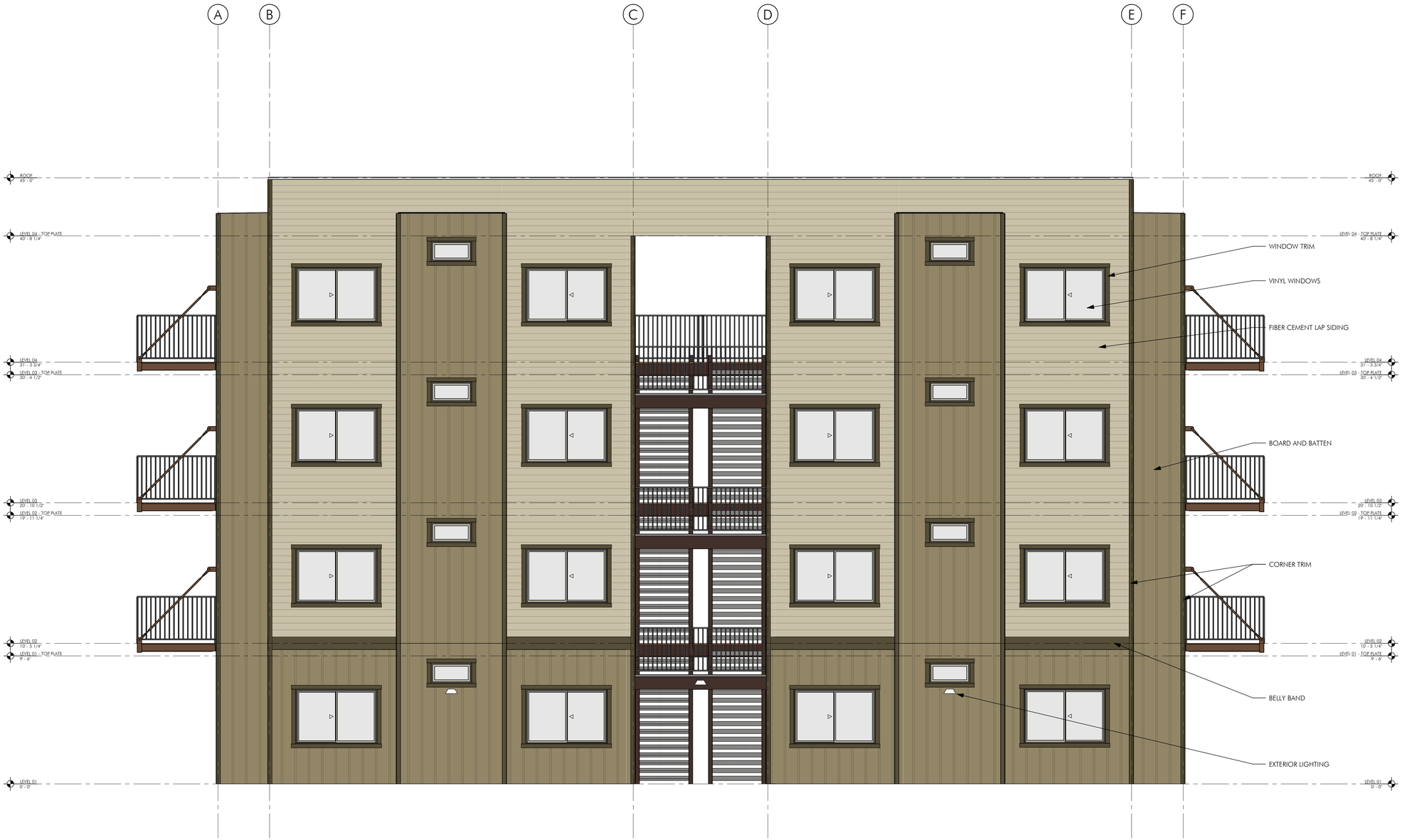
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A2.02
A




1 WEST ELEVATION

0' 1' 2' 4' 8' 12'

1/4" = 1'-0"

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.

STUDIO 3 ARCHITECTURE INCORPORATED

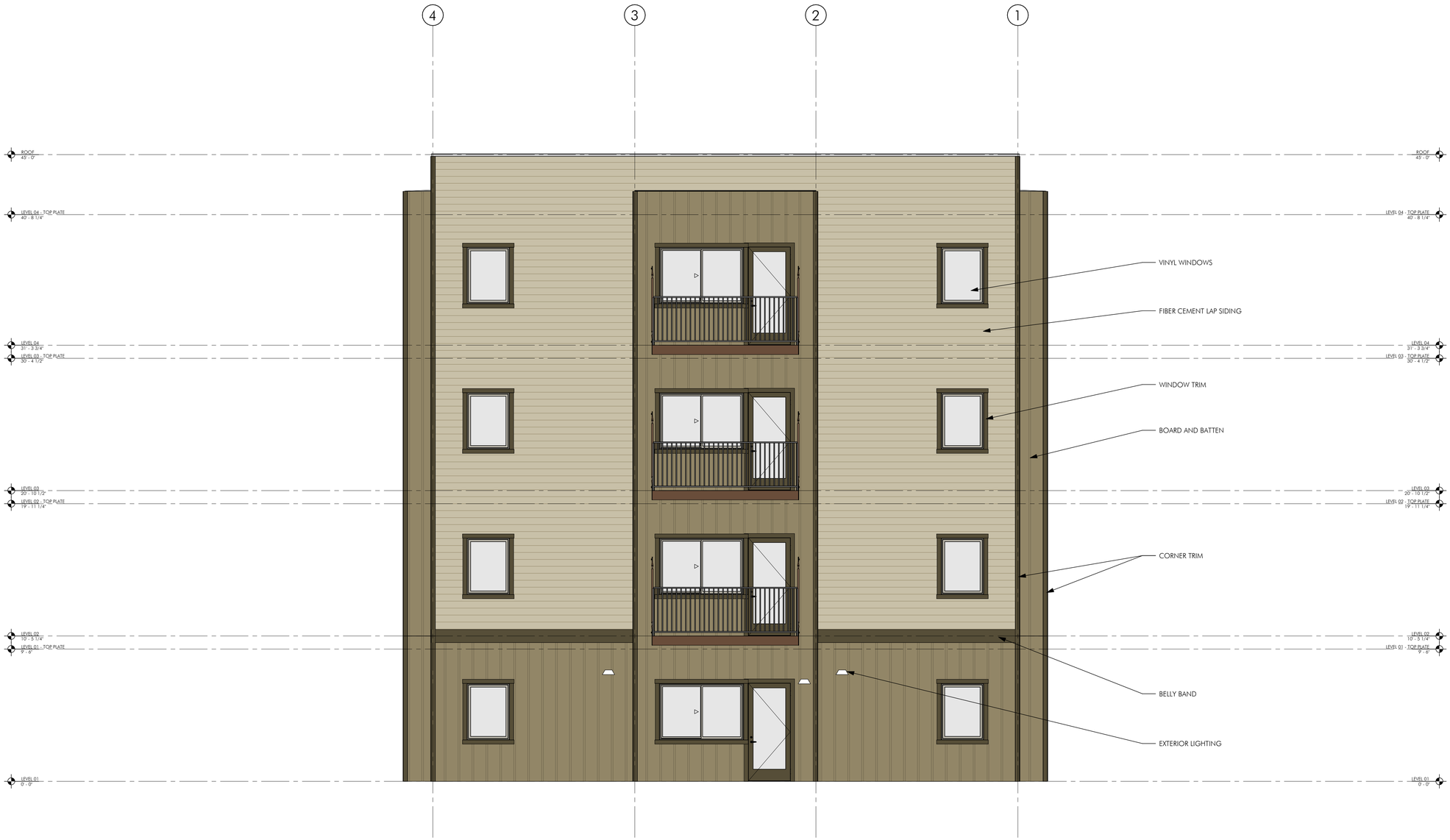
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A2.03
A




1 NORTH ELEVATION

0' 1' 2' 4' 8' 12'

1/4" = 1'-0"

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.

STUDIO 3 ARCHITECTURE INCORPORATED

275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

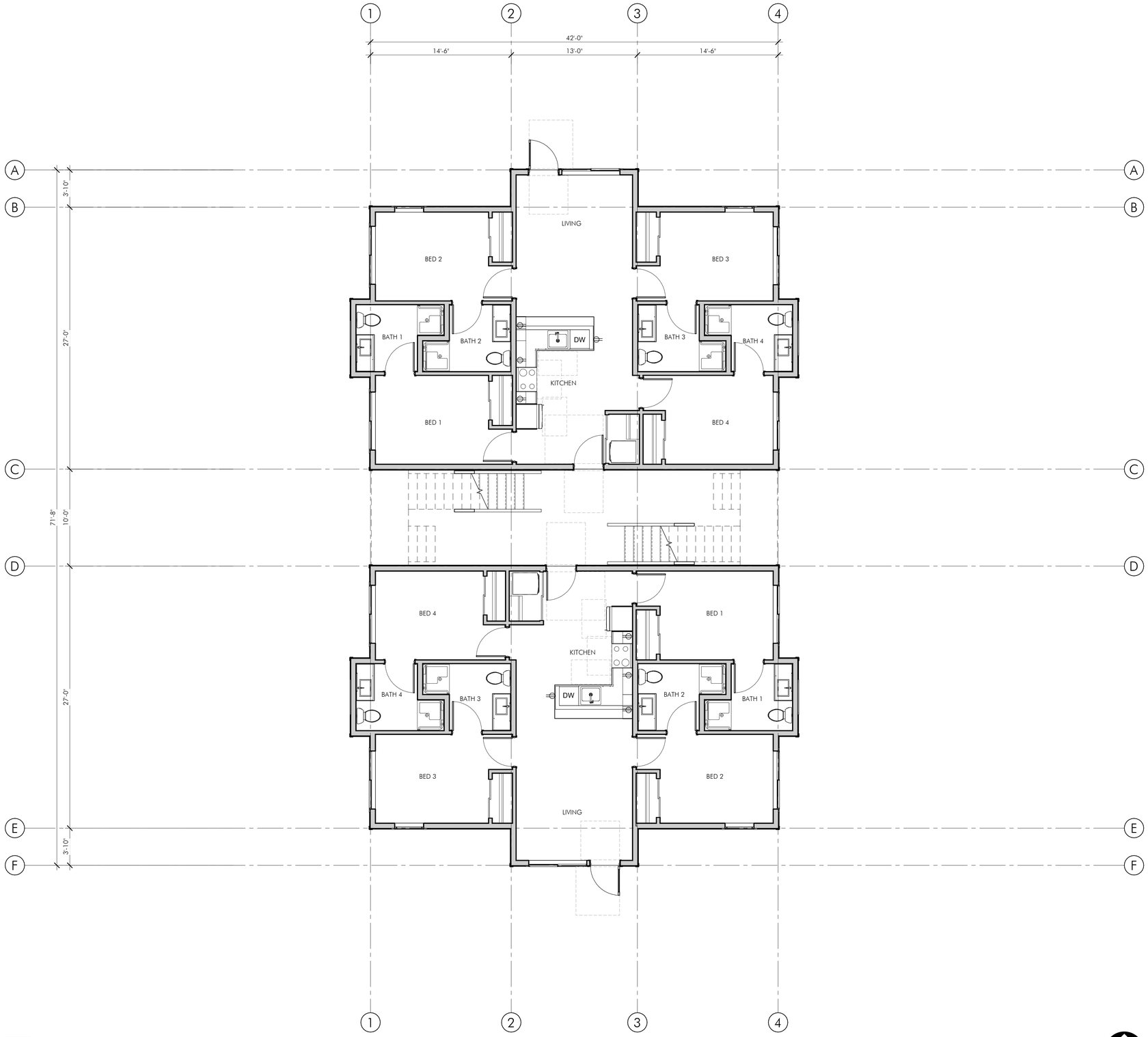
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE

1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A2.04
A




1 LEVEL 01 - FLOOR PLAN

0' 2' 4' 6' 8' 10' 16'

3/16" = 1'-0"

## GENERAL PLAN NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED. NOTIFY ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY. OBTAIN CLARIFICATION OF DIMENSIONS OR DISCREPANCIES PRIOR TO PROCEEDING WITH AREA OF REQUIRED WORK.
3. DIMENSIONS ARE TO FACE OF FRAMING. DIMENSIONS STATED AS CLEAR ARE TO FACE OF FINISH.
4. SEE WALL SECTIONS FOR DESCRIPTION OF EXTERIOR WALL MATERIALS.
5. ALL INTERIOR PARTITIONS TO RECEIVE GLASS FIBER INSULATION, FULL HEIGHT.
6. COORDINATE LOCATION OF RECESSED OR SEMI-RECESSED ITEMS TO AVOID BACK TO BACK INSTALLATION AND TO REDUCE NOISE TRANSFER THROUGH PARTITIONS.
7. INSTALL WALL BACKING FOR ALL WALL MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: DOOR STOPS, FIXTURES, WALL CABINETS, SHELVING, COUNTERS, TOILET ACCESSORIES, SECURITY EQUIPMENT, TACK BOARDS AND MARKER BOARDS, HAND RAILS AND WINDOW COVERING TRACKS.
8. SEPARATE AREAS IN WHICH WORK IS BEING CONDUCTED FROM OTHER AREAS THAT ARE STILL OCCUPIED.
   A. PROVIDE, ERECT, AND MAINTAIN TEMPORARY DUSTPROOF PARTITIONS OF SUITABLE CONSTRUCTION IN LOCATIONS INDICATED ON DRAWINGS OR AS DIRECTED.
9. PROTECT EXISTING WORK TO REMAIN.
   A. PREVENT MOVEMENT OF STRUCTURE; PROVIDE SHORING AND BRACING IF NECESSARY.
   B. PERFORM CUTTING TO ACCOMPLISH REMOVALS NEATLY AND AS SPECIFIED FOR CUTTING NEW WORK.
   C. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING REMOVAL WORK.
   D. PATCH AS SPECIFIED FOR PATCHING NEW WORK.
10. REMOVE DEBRIS, JUNK, AND TRASH FROM SITE.
11. REMOVE FROM SITE ALL MATERIALS NOT TO BE REUSED ON SITE; DO NOT BURN OR BURY.
12. LEAVE SITE IN CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
13. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE LANDS.
14. WORK SHOWN ON THESE DRAWINGS IS TO BE SUPPLIED, FURNISHED, CONSTRUCTED, INSTALLED ALL AS PER THE GENERAL CONDITIONS AND THE SPECIFICATIONS: EXCEPTIONS AS DESCRIBED BY THE FOLLOWING ABBREVIATIONS:
   A. OFCI CONTRACTOR FURNISHED - CONTRACTOR INSTALLED.
   B. OFCI OWNER FURNISHED - CONTRACTOR INSTALLED.
   C. OFOI OWNER FURNISHED - OWNER INSTALLED.
   D. NIC OR N.I.C. NOT IN CONTRACT OR NOT A PART OF THIS CONTRACT.

## PLAN LEGEND:

## FLOOR PLAN NOTES:

1 SAMPLE PLAN NOTE

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

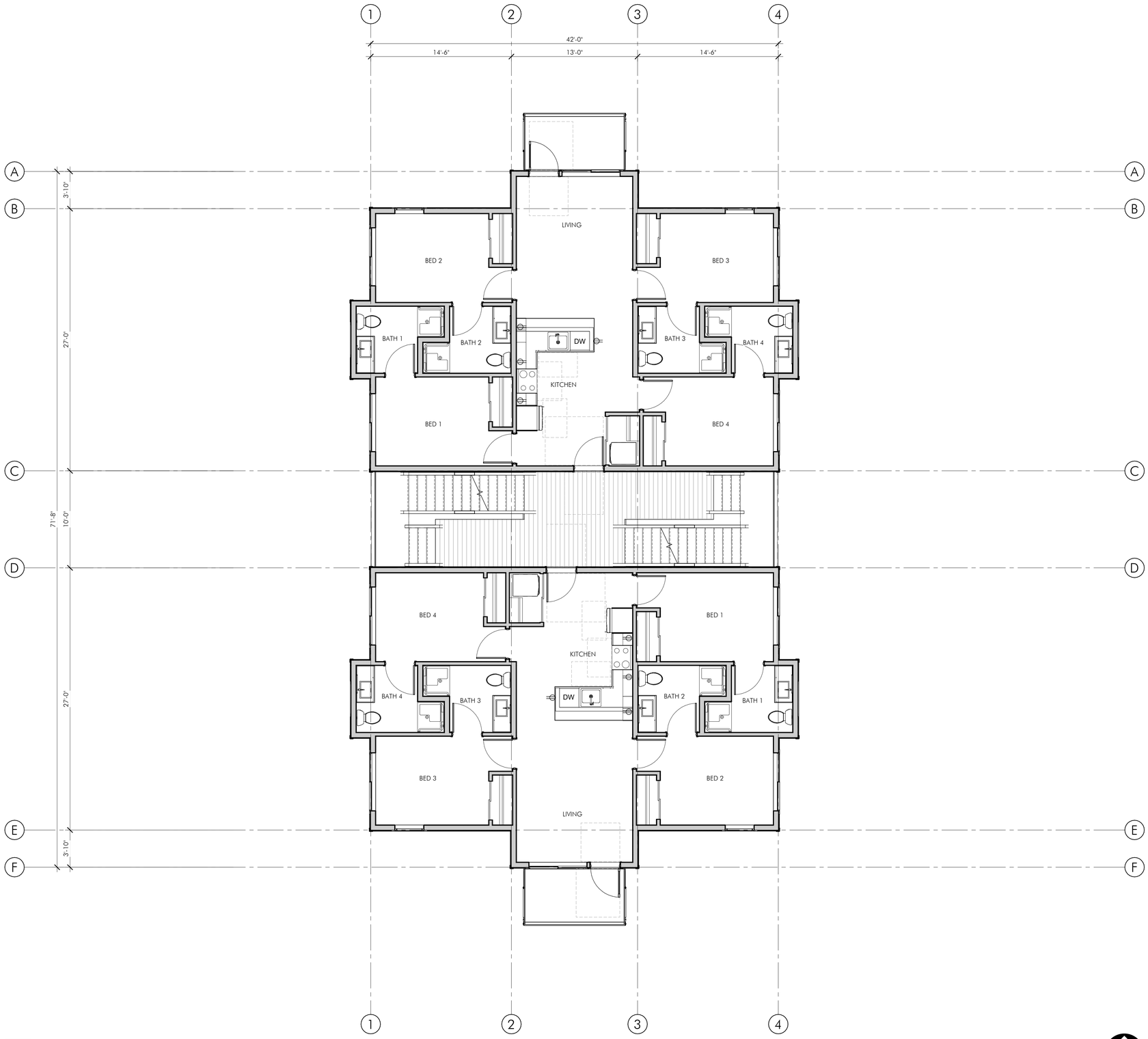
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A1.21
B

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.




## GENERAL PLAN NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED. NOTIFY ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY. OBTAIN CLARIFICATION OF DIMENSIONS OR DISCREPANCIES PRIOR TO PROCEEDING WITH AREA OF REQUIRED WORK.
3. DIMENSIONS ARE TO FACE OF FRAMING. DIMENSIONS STATED AS CLEAR ARE TO FACE OF FINISH.
4. SEE WALL SECTIONS FOR DESCRIPTION OF EXTERIOR WALL MATERIALS.
5. ALL INTERIOR PARTITIONS TO RECEIVE GLASS FIBER INSULATION, FULL HEIGHT.
6. COORDINATE LOCATION OF RECESSED OR SEMI-RECESSED ITEMS TO AVOID BACK TO BACK INSTALLATION AND TO REDUCE NOISE TRANSFER THROUGH PARTITIONS.
7. INSTALL WALL BACKING FOR ALL WALL MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: DOOR STOPS, FIXTURES, WALL CABINETS, SHELVING, COUNTERS, TOILET ACCESSORIES, SECURITY EQUIPMENT, TACK BOARDS AND MARKER BOARDS, HAND RAILS AND WINDOW COVERING TRACKS.
8. SEPARATE AREAS IN WHICH WORK IS BEING CONDUCTED FROM OTHER AREAS THAT ARE STILL OCCUPIED.
   A. PROVIDE, ERECT, AND MAINTAIN TEMPORARY DUSTPROOF PARTITIONS OF SUITABLE CONSTRUCTION IN LOCATIONS INDICATED ON DRAWINGS OR AS DIRECTED.
9. PROTECT EXISTING WORK TO REMAIN.
   A. PREVENT MOVEMENT OF STRUCTURE; PROVIDE SHORING AND BRACING IF NECESSARY.
   B. PERFORM CUTTING TO ACCOMPLISH REMOVALS NEATLY AND AS SPECIFIED FOR CUTTING NEW WORK.
   C. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING REMOVAL WORK.
   D. PATCH AS SPECIFIED FOR PATCHING NEW WORK.
10. REMOVE DEBRIS, JUNK, AND TRASH FROM SITE.
11. REMOVE FROM SITE ALL MATERIALS NOT TO BE REUSED ON SITE; DO NOT BURN OR BURY.
12. LEAVE SITE IN CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
13. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE LANDS.
14. WORK SHOWN ON THESE DRAWINGS IS TO BE SUPPLIED, FURNISHED, CONSTRUCTED, INSTALLED ALL AS PER THE GENERAL CONDITIONS AND THE SPECIFICATIONS: EXCEPTIONS AS DESCRIBED BY THE FOLLOWING ABBREVIATIONS:
   A. OFCI CONTRACTOR FURNISHED - CONTRACTOR INSTALLED.
   B. OFCI OWNER FURNISHED - CONTRACTOR INSTALLED.
   C. OFOI OWNER FURNISHED - OWNER INSTALLED.
   D. NIC OR N.I.C. NOT IN CONTRACT OR NOT A PART OF THIS CONTRACT.

## PLAN LEGEND:

## FLOOR PLAN NOTES:

1 SAMPLE PLAN NOTE

1 LEVEL 02 - FLOOR PLAN

0' 2' 4' 6' 8' 10' 16'

3/16" = 1'-0"

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

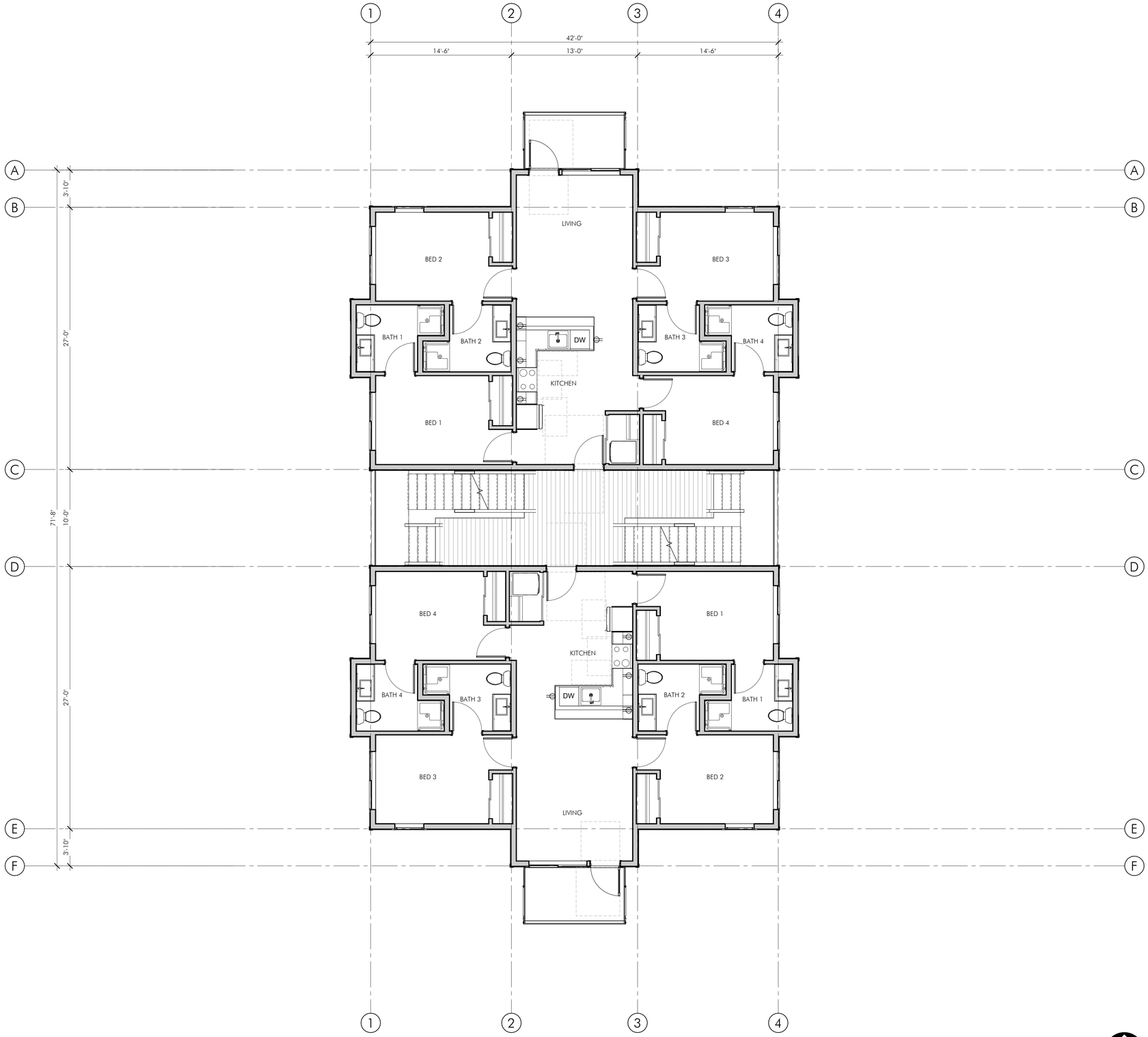
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A1.22
B

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.




1 LEVEL 03 - FLOOR PLAN

0' 2' 4' 6' 8' 10' 16'

3/16" = 1'-0"

N

## GENERAL PLAN NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED. NOTIFY ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY. OBTAIN CLARIFICATION OF DIMENSIONS OR DISCREPANCIES PRIOR TO PROCEEDING WITH AREA OF REQUIRED WORK.
3. DIMENSIONS ARE TO FACE OF FRAMING. DIMENSIONS STATED AS CLEAR ARE TO FACE OF FINISH.
4. SEE WALL SECTIONS FOR DESCRIPTION OF EXTERIOR WALL MATERIALS.
5. ALL INTERIOR PARTITIONS TO RECEIVE GLASS FIBER INSULATION, FULL HEIGHT.
6. COORDINATE LOCATION OF RECESSED OR SEMI-RECESSED ITEMS TO AVOID BACK TO BACK INSTALLATION AND TO REDUCE NOISE TRANSFER THROUGH PARTITIONS.
7. INSTALL WALL BACKING FOR ALL WALL MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: DOOR STOPS, FIXTURES, WALL CABINETS, SHELVING, COUNTERS, TOILET ACCESSORIES, SECURITY EQUIPMENT, TACK BOARDS AND MARKER BOARDS, HAND RAILS AND WINDOW COVERING TRACKS.
8. SEPARATE AREAS IN WHICH WORK IS BEING CONDUCTED FROM OTHER AREAS THAT ARE STILL OCCUPIED.
   A. PROVIDE, ERECT, AND MAINTAIN TEMPORARY DUSTPROOF PARTITIONS OF SUITABLE CONSTRUCTION IN LOCATIONS INDICATED ON DRAWINGS OR AS DIRECTED.
9. PROTECT EXISTING WORK TO REMAIN.
   A. PREVENT MOVEMENT OF STRUCTURE; PROVIDE SHORING AND BRACING IF NECESSARY.
   B. PERFORM CUTTING TO ACCOMPLISH REMOVALS NEATLY AND AS SPECIFIED FOR CUTTING NEW WORK.
   C. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING REMOVAL WORK.
   D. PATCH AS SPECIFIED FOR PATCHING NEW WORK.
10. REMOVE DEBRIS, JUNK, AND TRASH FROM SITE.
11. REMOVE FROM SITE ALL MATERIALS NOT TO BE REUSED ON SITE; DO NOT BURN OR BURY.
12. LEAVE SITE IN CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
13. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE LANDS.
14. WORK SHOWN ON THESE DRAWINGS IS TO BE SUPPLIED, FURNISHED, CONSTRUCTED, INSTALLED ALL AS PER THE GENERAL CONDITIONS AND THE SPECIFICATIONS: EXCEPTIONS AS DESCRIBED BY THE FOLLOWING ABBREVIATIONS:
   A. CFCI CONTRACTOR FURNISHED - CONTRACTOR INSTALLED.
   B. OFCI OWNER FURNISHED - CONTRACTOR INSTALLED.
   C. OFOI OWNER FURNISHED - OWNER INSTALLED.
   D. NIC OR N.I.C. NOT IN CONTRACT OR NOT A PART OF THIS CONTRACT.

## PLAN LEGEND:

## FLOOR PLAN NOTES:

1 SAMPLE PLAN NOTE

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

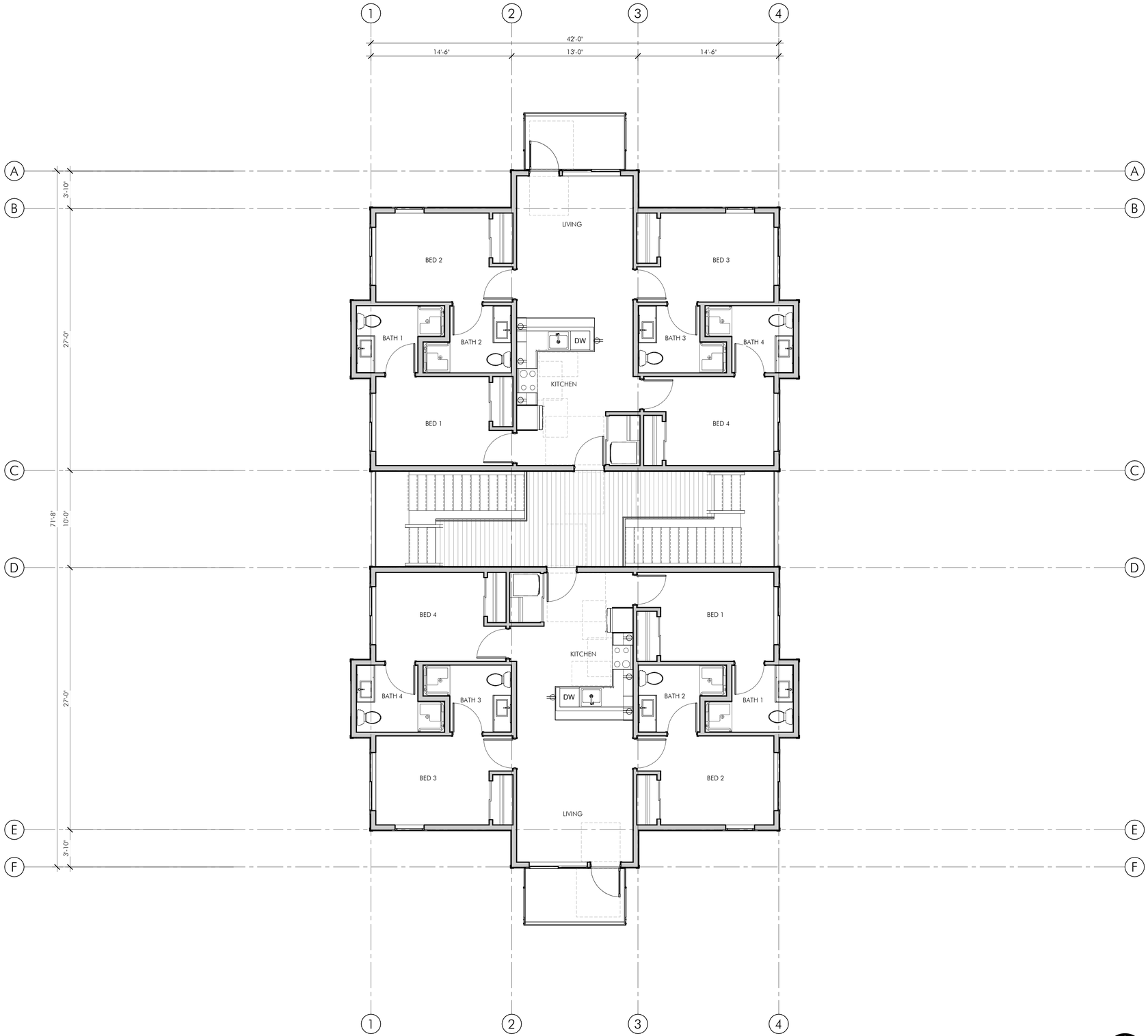
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
**A1.23**
**B**

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.




1 LEVEL 04 FLOOR PLAN

0' 2' 4' 6' 8' 10' 16'

3/16" = 1'-0"

## GENERAL PLAN NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED. NOTIFY ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY UPON DISCOVERY. OBTAIN CLARIFICATION OF DIMENSIONS OR DISCREPANCIES PRIOR TO PROCEEDING WITH AREA OF REQUIRED WORK.
3. DIMENSIONS ARE TO FACE OF FRAMING. DIMENSIONS STATED AS CLEAR ARE TO FACE OF FINISH.
4. SEE WALL SECTIONS FOR DESCRIPTION OF EXTERIOR WALL MATERIALS.
5. ALL INTERIOR PARTITIONS TO RECEIVE GLASS FIBER INSULATION, FULL HEIGHT.
6. COORDINATE LOCATION OF RECESSED OR SEMI-RECESSED ITEMS TO AVOID BACK TO BACK INSTALLATION AND TO REDUCE NOISE TRANSFER THROUGH PARTITIONS.
7. INSTALL WALL BACKING FOR ALL WALL MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: DOOR STOPS, FIXTURES, WALL CABINETS, SHELVING, COUNTERS, TOILET ACCESSORIES, SECURITY EQUIPMENT, TACK BOARDS AND MARKER BOARDS, HAND RAILS AND WINDOW COVERING TRACKS.
8. SEPARATE AREAS IN WHICH WORK IS BEING CONDUCTED FROM OTHER AREAS THAT ARE STILL OCCUPIED.
   A. PROVIDE, ERECT, AND MAINTAIN TEMPORARY DUSTPROOF PARTITIONS OF SUITABLE CONSTRUCTION IN LOCATIONS INDICATED ON DRAWINGS OR AS DIRECTED.
9. PROTECT EXISTING WORK TO REMAIN.
   A. PREVENT MOVEMENT OF STRUCTURE; PROVIDE SHORING AND BRACING IF NECESSARY.
   B. PERFORM CUTTING TO ACCOMPLISH REMOVALS NEATLY AND AS SPECIFIED FOR CUTTING NEW WORK.
   C. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING REMOVAL WORK.
   D. PATCH AS SPECIFIED FOR PATCHING NEW WORK.
10. REMOVE DEBRIS, JUNK, AND TRASH FROM SITE.
11. REMOVE FROM SITE ALL MATERIALS NOT TO BE REUSED ON SITE; DO NOT BURN OR BURY.
12. LEAVE SITE IN CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
13. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE LANDS.
14. WORK SHOWN ON THESE DRAWINGS IS TO BE SUPPLIED, FURNISHED, CONSTRUCTED, INSTALLED ALL AS PER THE GENERAL CONDITIONS AND THE SPECIFICATIONS: EXCEPTIONS AS DESCRIBED BY THE FOLLOWING ABBREVIATIONS:
   A. OFCI CONTRACTOR FURNISHED - CONTRACTOR INSTALLED.
   B. OFCI OWNER FURNISHED - CONTRACTOR INSTALLED.
   C. OFOI OWNER FURNISHED - OWNER INSTALLED.
   D. NIC OR N.I.C. NOT IN CONTRACT OR NOT A PART OF THIS CONTRACT.

## PLAN LEGEND:

## FLOOR PLAN NOTES:

1 SAMPLE PLAN NOTE

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

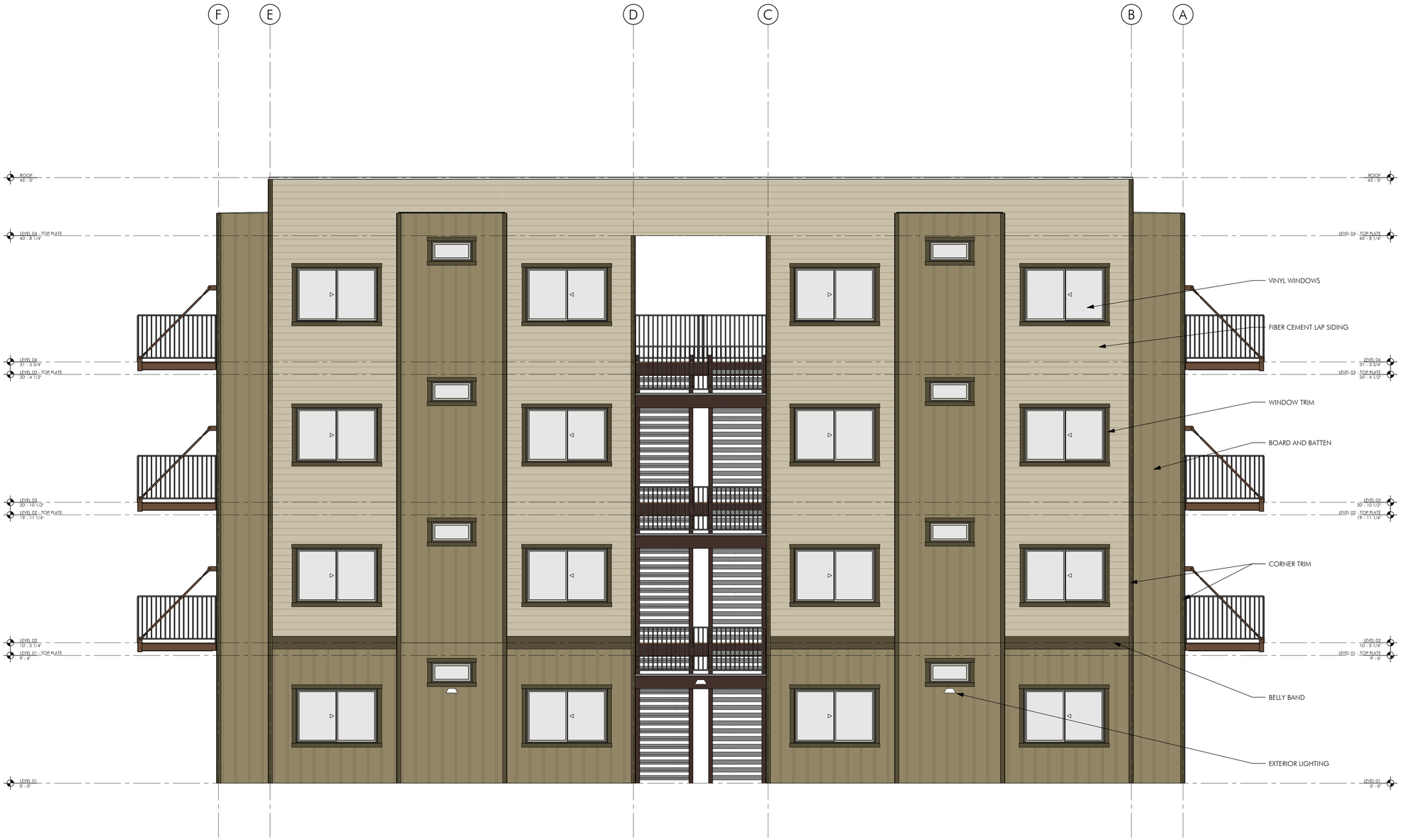
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A1.24
B

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.




1 EAST ELEVATION

0' 1' 2' 4' 8' 12'

1/4" = 1'-0"

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.

STUDIO 3 ARCHITECTURE INCORPORATED

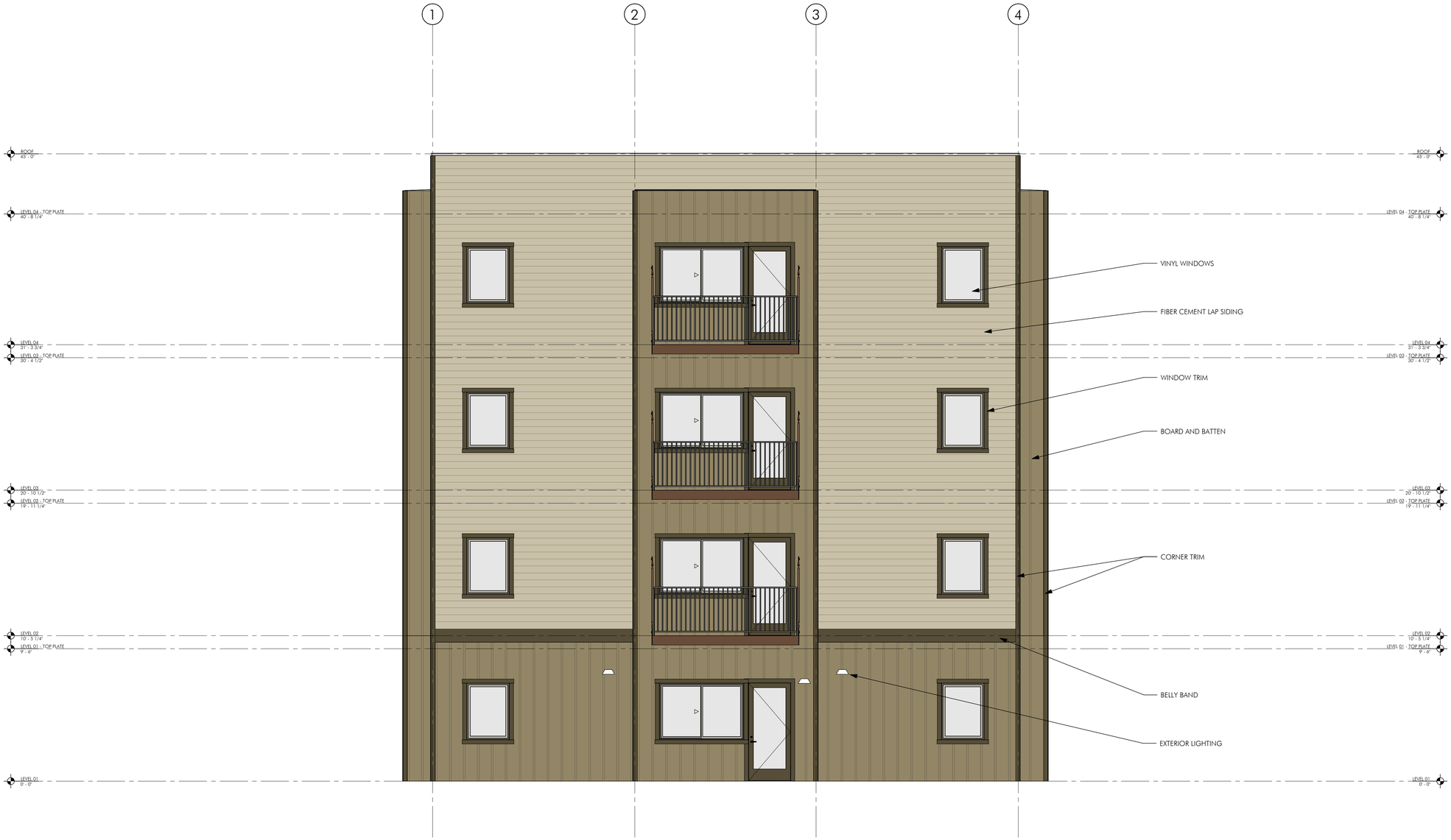
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A2.01
B




1 SOUTH ELEVATION

0' 1' 2' 4' 8' 12'

1/4" = 1'-0"

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.

STUDIO 3
ARCHITECTURE
INCORPORATED

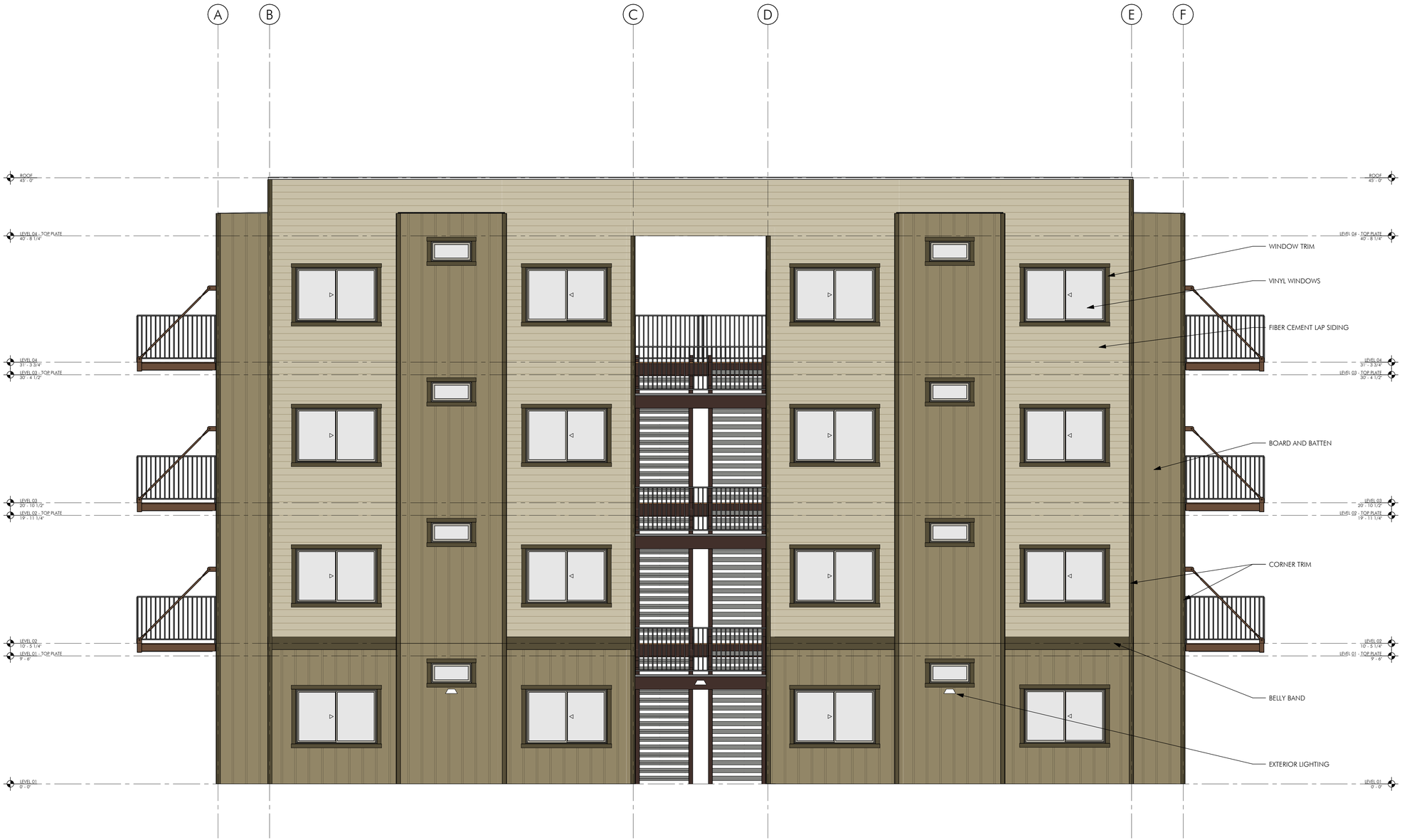
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A2.02
B




1 WEST ELEVATION

0' 1' 2' 4' 8' 12'

1/4" = 1'-0"

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.

STUDIO 3 ARCHITECTURE INCORPORATED

275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

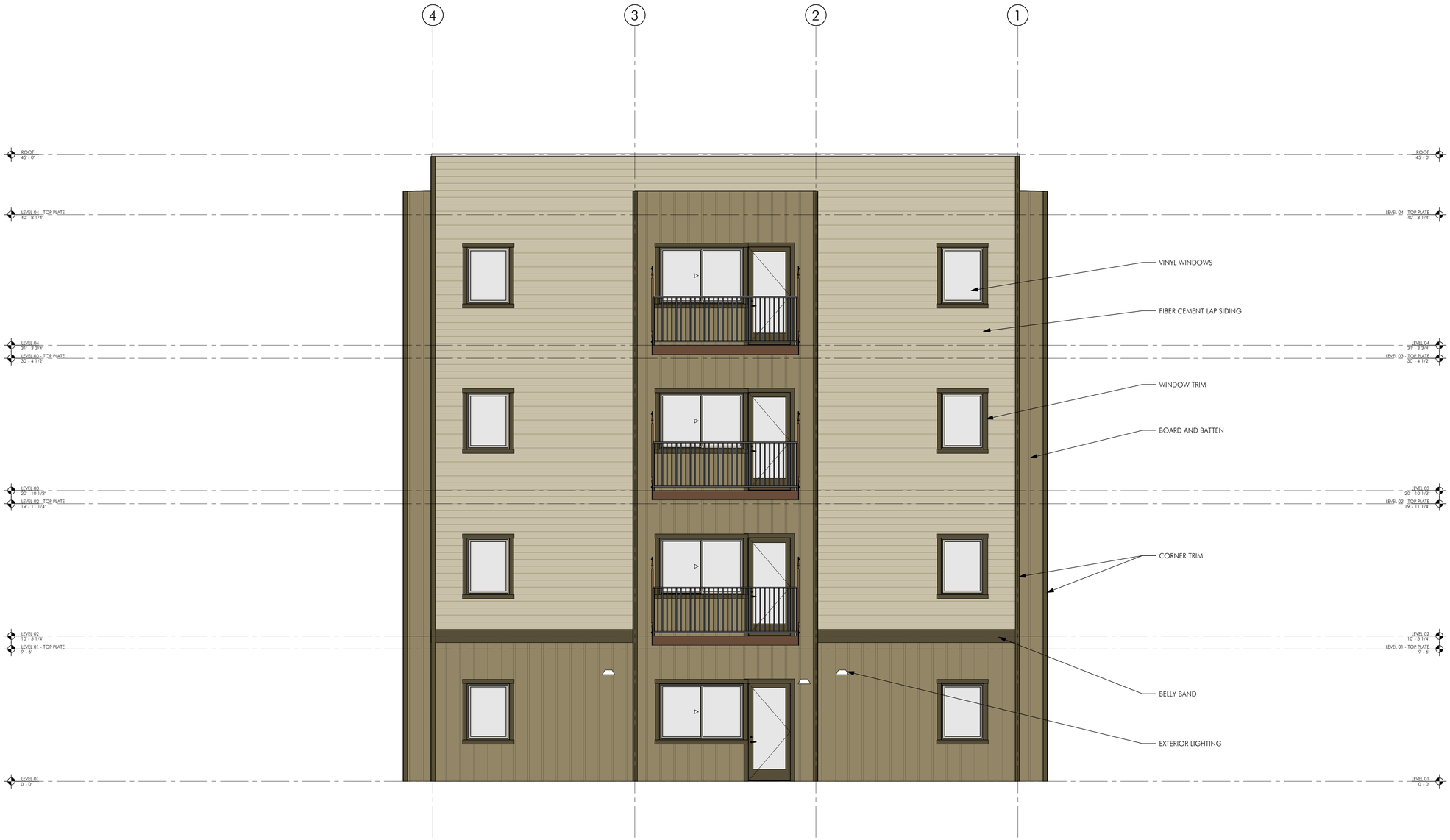
IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE

1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A2.03
B




1 NORTH ELEVATION

0' 1' 2' 4' 8' 12'

1/4" = 1'-0"

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.

STUDIO 3
ARCHITECTURE
INCORPORATED

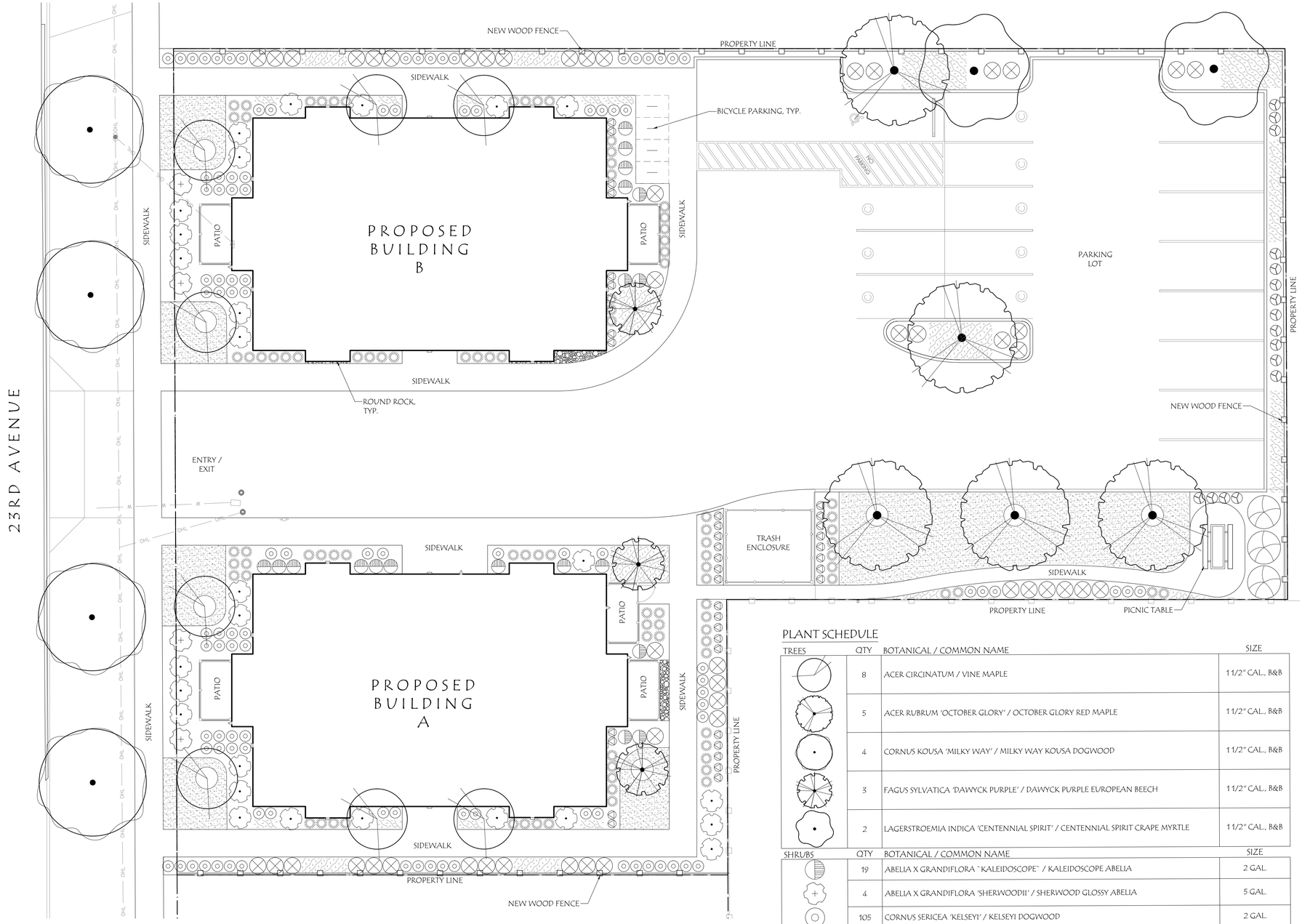
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
A2.04
B




## GENERAL NOTES:

1. DRAWINGS ARE PRELIMINARY, NOT FOR CONSTRUCTION OR BIDDING.
2. SEE ARCHITECTURAL DRAWINGS FOR SITE PLAN AND AREA CALCULATIONS.
3. SEE CIVIL DRAWINGS FOR GRADING, UTILITIES, AND STORMWATER INFORMATION.
4. PLANTS TO BE SIZED ACCORDING TO CITY OF FOREST GROVE REQUIREMENTS FOR GENERAL PLANTING.
5. STORMWATER FACILITY PLANTINGS TO FOLLOW CWS STORMWATER PLANTING REQUIREMENTS. PLANTS TO BE SELECTED FROM APPROVED PLANT LIST .
7. STREET TREES TO BE SELECTED FROM CITY OF FOREST GROVE APPROVED STREET TREE LIST.
8. LANDSCAPE TO BE IRRIGATED BY AN AUTOMATIC UNDERGROUND SYSTEM.

## LEGEND:

2"-6" ROUND ROCK, GRAY, 6" DEPTH

## PLANT SCHEDULE

| TREES | QTY | BOTANICAL / COMMON NAME | SIZE |
|---|---|---|---|
| | 8 | ACER CIRCINATUM / VINE MAPLE | 1 1/2" CAL., B&B |
| | 5 | ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY RED MAPLE | 1 1/2" CAL., B&B |
| | 4 | CORNUS KOUSA 'MILKY WAY' / MILKY WAY KOUSA DOGWOOD | 1 1/2" CAL., B&B |
| | 3 | FAGUS SYLVATICA 'DAWYCK PURPLE' / DAWYCK PURPLE EUROPEAN BEECH | 1 1/2" CAL., B&B |
| | 2 | LAGERSTROEMIA INDICA 'CENTENNIAL SPIRIT' / CENTENNIAL SPIRIT CRAPE MYRTLE | 1 1/2" CAL., B&B |

| SHRUBS | QTY | BOTANICAL / COMMON NAME | SIZE |
|---|---|---|---|
| | 19 | ABELIA X GRANDIFLORA `KALEIDOSCOPE` / KALEIDOSCOPE ABELIA | 2 GAL. |
| | 4 | ABELIA X GRANDIFLORA 'SHERWOODII' / SHERWOOD GLOSSY ABELIA | 5 GAL. |
| | 105 | CORNUS SERICEA 'KELSEYI' / KELSEYI DOGWOOD | 2 GAL. |
| | 37 | ILEX CRENATA `SKY PENCIL` / SKY PENCIL JAPANESE HOLLY | 24"-30" HT. |
| | 3 | LIGUSTRUM JAPONICUM 'TEXANUM' / TEXAS JAPANESE PRIVET | 5 GAL. |
| | 16 | NANDINA DOMESTICA 'ATROPURPUREA NANA' / DWARF HEAVENLY BAMBOO | 1 GAL. |
| | 27 | PRUNUS LAUROCERASUS 'OTTO LUYKEN' / OTTO LUYKEN ENGLISH LAUREL | 2 GAL. |
| | 49 | RHAPHIOLEPIS INDICA 'BALLERINA' / BALLERINA INDIAN HAWTHORN | 2 GAL. |

| GRASSES / PERENNIALS | QTY | BOTANICAL / COMMON NAME | SIZE |
|---|---|---|---|
| | 99 | CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / KARL FOERSTER FEATHER REED GRASS | 1 GAL. |

| GROUND COVERS | QTY | BOTANICAL / COMMON NAME | SIZE | SPACING |
|---|---|---|---|---|
| | 51 | RUBUS PENTALOBUS `EMERALD CARPET` / EMERALD CARPET CREEPING RASPBERRY | 1 GAL. | 48" o.c. |
| | 1,552 SF | PROTIME PT301 WATER SMARTER FESCUE | SEED AT RATE OF 7-10 LBS PER 1,000 SF | |

Laurus Designs, LLC
1012 Pine Street
Silverton, Oregon 97381
503.784.6494
laurusdesigns.com

# FOREST GROVE APARTMENTS

1930 23RD AVE
FOREST GROVE, OREGON

REGISTERED 643 PRELIMINARY LAURA A. ANTONSON OREGON 11/16/2007 LANDSCAPE ARCHITECT

## PRELIMINARY PLANTING PLAN

SCALE: 1" = 10' - 0"

0' 5' 10' 20'
SCALE

JANUARY 28TH, 2025

## REVISIONS

| # | DATE | NOTES | INITIALS |
|---|---|---|---|

L1.1

SHEET 1 OF 1

PROJECT #: 1683R

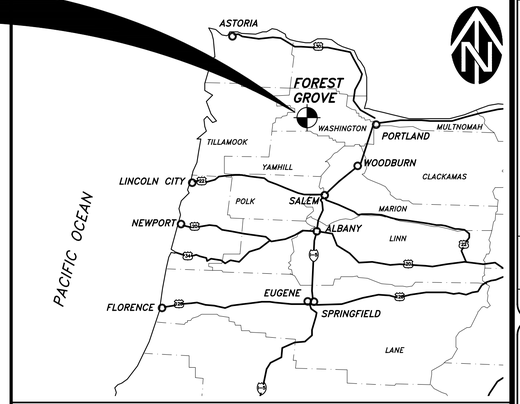
DRAWINGS FOR:

# 1930 23RD AVE
# FOREST GROVE, OR 97116

FOR:

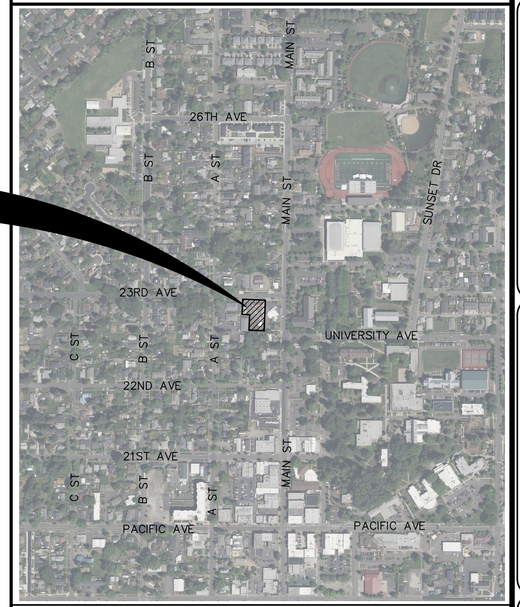
MR. SCOTT MCDONALD, AIA
STUDIO 3 ARCHITECTURE
275 COURT ST
SALEM, OR 97301
503.390.6500

PROJECT LOCATION




VICINITY MAP

PROJECT LOCATION




811
Know what's **below.**
**Call** before you dig.

## SHEET INDEX


| SHT NO | DESCRIPTION |
|---|---|
| C0.0 | COVER SHEET, VICINITY AND LOCATION MAPS, DRAWING INDEX |
| C1.0 | EXISTING CONDITIONS, EROSION CONTROL, AND DEMOLITION PLAN |
| C1.1 | POST-DEVELOP EROSION CONTROL PLAN |
| C1.2 | EROSION CONTROL NOTES |
| C1.3 | EROSION CONTROL DETAILS |
| C2.0 | GRADING AND DRAINAGE PLAN |
| C3.0 | UTILITY PLAN |
| C4.0 | SURFACING PLAN |
| C5.0 | CONSTRUCTION NOTES |
| C6.0 | CONSTRUCTION DETAILS (WESTECH) |
| C6.1 | DETAILS (FOREST GROVE) |
| C6.2 | DETAILS (FOREST GROVE) |
| C6.3 | DETAILS (CLEAN WATER SERVICES) |
| C6.4 | DETAILS (OLDCASTLE) |
| – | – |
| – | – |


***NOTES:***

1. *BENCH MARK: THE ELEVATIONS ARE BASED ON THE NAVD 88 VERTICAL DATUM FROM A STATIC GPS OBSERVATION AS COMPUTED BY TRIMBLE POST-PROCESSING SERVICE BASED ON RTX TECHNOLOGY. THE STATIC OBSERVATION WAS PERFORMED ON MARCH 5, 2024.*
2. *CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.*
3. *UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION.*
4. *ALL UTILITIES MAY NOT BE SHOWN.*
5. *NO TITLE REPORT WAS PROVIDED THEREFORE ALL EASEMENTS MAY NOT BE SHOWN.*
6. *DUE TO DEBRIS ONSITE, SOME UTILITIES MAY NOT BE SHOWN.*

***LEGEND:***

*TC = TOP OF CURB*
*G = GUTTER OF CURB*
*PP = POWER POLE*
*GA = GUY ANCHOR*
*WM = WATER METER*
*CO = CLEAN OUT*
*DS = DOWN SPOUT*
*GM = GAS METER*
*FF = FINISH FLOOR ELEVATION*
*EM = ELECTRIC METER*
*BOL = BOLLARD*

LINE TYPES

CATV LINE
COMMUNICATION LINE
EASEMENT LINE
FENCE LINE
FIBER OPTIC LINE
GAS LINE
EDGE OF GRAVEL LINE
OVERHEAD LINE
PHONE LINE
POWER LINE
SANITARY SEWER LINE
STORM DRAIN LINE
WATER LINE

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | | REVISIONS | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026
REVIEW


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# COVER SHEET, VICINITY AND LOCATION MAPS, DRAWING INDEX

DRAWING
C0.0

JOB NUMBER
3547.0000.0

3/10/2025 3:35:56 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Cover Sheet.dwg, (C0.0 tab)

EROSION CONTROL LEGEND

- SILT SACK.
- BIO BAGS.
- SILT FENCE.

DEMOLITION LEGEND

- (S) SAWCUT.
- (R) CONTRACTOR TO REMOVE.
- (P) CONTRACTOR TO PROTECT

SILT FENCE (TYP.)

SILT FENCE (TYP.)

SILT FENCE (TYP.)

CHAIN LINK FENCE

N 02°23'39" E 100.00'

N 87°51'25" W 50.00'

N 87°52'50" W 100.00'

S 02°23'39" W 201.80'

NO ACCESS TO SEARCH FOR THIS CORNER

(R) CONCRETE

(R) FENCE

(R) GATE

(R) SIDEWALK

(R) CURB

(P) CURB

(P) SIDEWALK

(S)

(R) BOLLARDS

(R) BUILDING

(R) ASPHALT

(R) CONCRETE

(R) CURB

GRAVEL CONSTRUCTION ENTRANCE

EXISTING BUILDING

1930 23RD AVENUE

LEAN TO NOT SHOWN

FF EL=195.2

FF EL=195.3

FF EL=195.4

FF EL=195.5

FF EL=195.7

CHAIN LINK FENCE

GATE

CONCRETE

CONCRETE (DEBRIS COVERS PAD)

ASPHALT

GRAVEL

EDGE OF ASPHALT

EDGE OF CONCRETE

GAS LINE AS PAINTED

PP W/ UNDERGROUND

PVC PIPE ABOVE GROUND

POSSIBLE CLEAN OUT FOR DOWN SPOUT

CO FLUSH WITH BUILDING

STORM LINE PER CITY AS-BUILTS

SEWER LINE PER CITY AS-BUILTS

WATER LINE AS PAINTED

GUTTER

DRIVEWAY

TAX LOT 5500

TAX LOT 5600

23RD AVENUE

1" R LINE AS PAINTED

0 5 10 20 FEET

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | | REVISIONS | |

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REVIEW
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE

1930 23RD FOREST GROVE

# EXISTING CONDITIONS, EROSION CONTROL, AND DEMOLITION PLAN

DRAWING
C1.0

JOB NUMBER
3547.0000.0

3/10/2025 3:36:07 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\EC EC Demo Plan.dwg, (C1.0 tab)

| | |
|---|---|
| STUDIO 3 ARCHITECTURE | DRAWING C1.1 |
| 1930 23RD FOREST GROVE | JOB NUMBER 3547.0000.0 |
| POST-DEVELOPED EROSION CONTROL PLAN | |

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 12, 2005 — WILLIAM J. WELLS

REVIEW

RENEWS: 6/30/2026

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY
0 1"

DATE: NOV 24
CKD. JW
DRN. IH
DSN. JW

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | | | |

REVISIONS

0 5 10 20 FEET

23RD AVENUE

WATER LINE AS PAINTED

STORM LINE PER CITY ASBUILTS

SEWER LINE PER CITY ASBUILTS

GAS LINE AS PAINTED

PP W/ UNDERGROUND

GRAVEL

CONCRETE

EDGE OF CONCRETE

CHAIN LINK FENCE

GUTTER

DRIVEWAY

FD 5/8" IRON ROD (POSSIBLY DISTURBED BY LARGE BOULDER)

FD 5/8" IRON ROD

PVC RPS ON GROUND

WATER LINE AS PAINTED

CO FLUSH WITH BUILDING

POSSIBLE CLEAN OUT FOR DOWN SPOUT

52% MAX

1.5%

FF=196.15

FF=196.12

FF EL=195.5

FF EL=195.3

FF EL=195.2

SILT FENCE (TYP.)

SILT SACKS (TYP.)

SILT FENCE (TYP.)

SILT FENCE (TYP.)

TAX LOT 5600

TAX LOT 5500

N 87°51'25" W 50.00'

NO ACCESS TO SEARCH FOR THIS CORNER

N 02°23'39" E 200.00'

S 02°23'39" W 201.80'

N 87°52'50" W 100.00'

EROSION CONTROL LEGEND

SILT SACK.

BIO BAGS.

SILT FENCE.

NOTES:

1. WHEN RAINFALL AND RUNOFF OCCURS, A KNOWLEDGEABLE AND EXPERIENCED PERSON IN THE PRINCIPLES, PRACTICES, INSTALLATION, AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS WHO WORKS FOR THE PERMITTEE MUST PROVIDE DAILY INSPECTIONS OF THE EROSION AND SEDIMENT CONTROLS AND DISCHARGE OUTFALLS.
2. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND FROM OCTOBER 1 THROUGH MAY 31ST EACH YEAR.
3. DURING WET WEATHER PERIOD, TEMPORARY STABILIZATION OF THE SITE MUST OCCUR AT THE END OF EACH WORK DAY.
4. SEDIMENT CONTROLS MUST BE INSTALLED AND MAINTAINED ON ALL DOWN GRADIENT SIDES OF THE CONSTRUCTION SITE AT ALL TIMES DURING CONSTRUCTION. THEY MUST REMAIN IN PLACE UNTIL PERMANENT VEGETATION OR OTHER PERMANENT COVERING OF EXPOSED SOIL IS ESTABLISHED.
5. ALL ACTIVE INLETS MUST HAVE SEDIMENT CONTROLS INSTALLED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
6. SIGNIFICANT AMOUNTS OF SEDIMENT THAT LEAVES THE SITE MUST BE CLEANED UP WITHIN 24 HOURS AND PLACED BACK ON THE SITE AND STABILIZED OR PROPERLY DISPOSED. THE CAUSE OF THE SEDIMENT RELEASE MUST BE FOUND AND PREVENTED FROM CAUSING A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN UP OF SEDIMENT SHALL BE PREFORMED ACCORDING TO THE OREGON DEPARTMENT OF STATE LANDS REQUIRED TIME FRAME.
7. SEDIMENT MUST NOT BE INTENTIONALLY WASHED INTO STORM SEWERS, DRAINAGE WAYS, OR WATER BODIES.
8. SEDIMENT MUST BE REMOVED FROM BEHIND ALL SEDIMENT CONTROL MEASURES WHEN IT HAS REACHED A HEIGHT OF 1/3-RD THE BARRIER HEIGHT AND PRIOR TO THE CONTROL MEASURES REMOVAL.
9. CLEANING OF ALL STRUCTURES WITH SUMPS MUST OCCUR WHEN THE SEDIMENT RETENTION CAPACITY HAS BEEN REDUCED BY 50% AND AT COMPLETION OF PROJECT.
10. ANY USE OF TOXIC OR OTHER HAZARDOUS MATERIALS MUST INCLUDE PROPER STORAGE, APPLICATION, AND DISPOSAL.
11. THE PERMITTEE MUST PROPERLY MANAGE HAZARDOUS WASTES, USED OILS, CONTAMINATED SOILS, CONCRETE WASTE, SANITARY WASTE, LIQUID WASTE, OR OTHER TOXIC SUBSTANCES DISCOVERED OR GENERATED DURING CONSTRUCTION.
12. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS. NUTRIENT RELEASES FROM FERTILIZERS TO SURFACE WATERS MUST BE MINIMIZED. TIME RELEASE FERTILIZERS SHOULD BE USED AND CARE SHOULD BE MADE IN APPLICATION OF FERTILIZERS WITHIN ANY WATER WAY RIPARIAN ZONE.
13. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH CURRENT CLEAN WATER SERVICES STANDARDS AND STATE, AND FEDERAL REGULATIONS.
14. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BOUNDARIES OF THE CLEARING LIMITS, VEGETATED BUFFERS, AND ANY SENSITIVE AREAS SHOWN ON THIS PLAN SHALL BE CLEARLY DELINEATED IN THE FIELD. UNLESS OTHERWISE APPROVED, NO DISTURBANCE IS PERMITTED BEYOND THE CLEARING LIMITS. THE OWNER/PERMITTEE MUST MAINTAIN THE DELINEATION FOR THE DURATION OF THE PROJECT. NOTE: VEGETATED CORRIDORS TO BE DELINEATED WITH ORANGE CONSTRUCTION FENCE OR APPROVED EQUAL.
15. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BMPS THAT MUST BE INSTALLED ARE GRAVEL CONSTRUCTION ENTRANCE, PERIMETER SEDIMENT CONTROL, AND INLET PROTECTION. THESE BMPS MUST BE MAINTAINED FOR THE DURATION OF THE PROJECT.
16. IF VEGETATIVE SEED MIXES ARE SPECIFIED, SEEDING MUST TAKE PLACE NO LATER THAN SEPTEMBER 1ST; THE TYPE AND PERCENTAGES OF SEED IN THE MIX ARE AS IDENTIFIED ON THE PLANS OR AS SPECIFIED BY THE DESIGN ENGINEER.
17. WATERTIGHT TRUCKS MUST BE USED TO TRANSPORT SATURATED SOILS FROM THE CONSTRUCTION SITE. AN APPROVED EQUIVALENT IS TO DRAIN THE SOIL ON SITE AT A DESIGNATED LOCATION USING APPROPRIATE BMPS; SOIL MUST BE DRAINED SUFFICIENTLY FOR MINIMAL SPILLAGE.
18. ALL PUMPING OF SEDIMENT LADEN WATER MUST BE DISCHARGED OVER AN UNDISTURBED, PREFERABLY VEGETATED AREA, AND THROUGH A SEDIMENT CONTROL BMP (I.E. FILTER BAG).
19. THE ESC PLAN MUST BE KEPT ONSITE. ALL MEASURES SHOWN ON THE PLAN MUST BE INSTALLED PROPERLY TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER A SURFACE WATER SYSTEM, ROADWAY, OR OTHER PROPERTIES.
20. THE ESC MEASURES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE MEASURES SHALL BE UPGRADED AS NEEDED TO MAINTAIN COMPLIANCE WITH ALL REGULATIONS.
21. WRITTEN ESC LOGS ARE SUGGESTED TO BE MAINTAINED ONSITE AND AVAILABLE TO DISTRICT INSPECTORS UPON REQUEST.
22. IN AREAS SUBJECT TO WIND EROSION, APPROPRIATE BMPS MUST BE USED, WHICH MAY INCLUDE THE APPLICATION OF FINE WATER SPRAYING, PLASTIC SHEETING, MULCHING, OR OTHER APPROVED MEASURES.
23. ALL EXPOSED SOILS MUST BE COVERED, AT END OF BUSINESS DAY, DURING WET WEATHER PERIOD, FROM OCTOBER 1 - MAY 31.

# STANDARD EROSION CONTROL NOTES FOR SITES LESS THAN 1 ACRE

DRAWING NO. 945 REVISED 10-31-19

Clean Water Services

| YEAR: / MONTH: | '25 02 | '25 03 | '25 04 | '25 05 | '25 06 | '25 07 | '25 08 | '25 09 | '25 10 | '25 11 | '25 12 | '26 01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEARING | X | X | X | | | | | | | | | |
| EXCAVATION | X | X | X | X | | | | | | | | |
| GRADING | X | X | X | X | X | X | X | X | X | X | X | X |
| CONSTRUCTION | X | X | X | X | X | X | X | X | X | X | X | X |
| **SEDIMENT CONTROLS:** | | | | | | | | | | | | |
| Silt Fencing | X | X | X | X | X | X | X | X | X | X | X | X |
| Sediment Traps | X | X | X | X | X | X | X | X | X | X | X | X |
| Sediment Basins | | | | | | | | | | | | |
| Storm Inlet Protection | X | X | X | X | X | | | | | | | |
| Drainage Swales | | | | | | | | | | | | |
| Check Dams | | | | | | | | | | | | |
| Contour Furrows | | | | | | | | | | | | |
| Terracing | | | | | | | | | | | | |
| Pipe Slope Drains | | | | | | | | | | | | |
| Rock Outlet Protection | | | | | | | | | | | | |
| Gravel Construction Entrance | | | | | | | | | | | | |
| Grass-lined Channel (Turf Reinforcement Mats) | | | | | | | | | | | | |
| Protection of trees with construction fences | | | | | | | | | | | | |
| Temporary Seeding and Planting | | | | | | | | | | | | |
| Permanent Seeding and Planting | | | | | | X | X | X | X | X | X | X |
| Other: | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

| CONTROL MEASURE | PHASE 1 | PHASE 2 | PHASE 3 | PHASE 4 | PHASE 5 |
|---|---|---|---|---|---|
| Silt Fencing | X | X | X | X | |
| Construction Entrance | | | | | |
| Sediment Traps | X | X | X | X | |
| Storm Inlet Protection | X | X | X | X | |
| Concrete Washout | | | | | |
| Rock Outlet Protection | | | | | |
| Permanent Seeding and Planting | | | | | X |

Phase 1: Prior to Ground Disturbance
Phase 2: After Completion of Rough Grading
Phase 3: After Installation of Storm Facilities
Phase 4: After Paving & Construction
Phase 5: After Project Completion and Cleanup

INSPECTION FREQUENCY FOR BMP

| Site Condition | Minimum Frequency |
|---|---|
| 1. Active period | Daily when stormwater runoff, including runoff from snowmelt, is occurring.<br><br>At least once every 14 days, regardless of whether stormwater runoff is occurring. |
| 2. Prior to the site becoming inactive or in anticipation of site inaccessibility. | Once to ensure that erosion and sediment control measures are in working order. Any necessary maintenance and repair must be made prior to leaving the site. |
| 3. Inactive periods greater than seven (14) consecutive calendar days | Once every month. |
| 4. Periods during which the site is inaccessible due to inclement weather | If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location. |
| 5. Periods during which discharge is unlikely due to frozen conditions | Monthly. Resume monitoring immediately upon melt, or when weather conditions make discharge likely. |

BMP Rationale

A comprehensive list of available Best Management Practices (BMP) options based on DEQ's 1200-C Permit Application and ESCP Guidance Document has been reviewed to complete this Erosion and Sediment Control Plan. Some of the above listed BMPs were not chosen because they were determined to not effectively manage erosion prevention and sediment control for this project based on specific site conditions, including soil conditions, topographic constraints, accessibility to the site, and other related conditions. As the project progresses and there is a need to revise the ESCP, an Action Plan will be submitted.

SOIL TYPE(S): PER BENTON CO. SOIL SURVEY THE SITE SOILS INCLUDE "WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES"

EROSION HAZARD: PER BENTON CO. SOIL SURVEY EROSION HAZARD IS "SLIGHT".

SITE AREA: 0.58 AC

DISTURBANCE AREA: 0.52 AC

SUPPLEMENTAL WESTECH NOTES:

1. Erosion control measures shall be maintained in such a manner as to ensure that sediment and sediment-laden water does not enter the drainge system, roadways, or violate applicable water quality standards.
2. The erosion control construction, maintenance, replacement and upgrading of the erosion control facilities is the responsibility of the Contractor until all construction is completed and approved, and permanent erosion control (i.e. vegetation/landscaping) is established on all disturbed areas.
3. All recommended erosion control procedures are dependent on construction methods, staging, site conditions, weather and scheduling. During the construction period, erosion control facilities shall be upgraded as necessary due to unexpected storm events and to ensure that sediment and sediment laden water does not leave the site.
4. The Contractor is responsible for control of sediment transport within project limits. If an installed erosion control system does not adequately contain sediment on site, then the erosion control measures shall be adjusted or supplemented by the Contractor as necessary to ensure that sediment laden water does not leave the site. Additional measures shall be provided as required to ensure that all paved areas are kept clean for the duration of the project. Additional interim measures will include, at a minimum, installation of silt fences in accordance with the details shown on the drawings. These measures shall be installed along all exposed embankments and cut slopes to prevent sediment transport.
5. All existing and newly constructed storm inlets and drains shall be protected until pavement surfaces are completed and/or vegetation is established.
6. Erosion control facilities and sediment fences on active sites shall be inspected by the Contractor at least daily during any period with measurable precipitation. Any required repairs or maintenance shall be completed immediately. The erosion control facilities on inactive sites shall be inspected and maintained by the Contractor a minimum of once a month or within 24 hours following the start of a storm event.
7. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system. The Contractor shall remove all accumulated sediment from all impacted catch basins and storm pipes prior to acceptance by the Owner.
8. The Contractor is solely responsible for protection of all adjacent property and downstream facilities from erosion and siltation during project construction. Any damage resulting from such erosion and siltation shall be corrected at the sole expense of the Contractor.
9. The Contractor shall provide site watering as necessary to prevent wind erosion of fine-grained soils.
10. Unless otherwise indicated on the drawings, all temporary erosion control facilities, including sediment fences, silt sacks, bio-bags, etc. shall be removed by the Contractor within 30 days after permanent landscaping/vegetation is established.
11. Sediment fences shall be constructed of continuous filter fabric to avoid use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap, and both ends securely fastened to a post.
12. Sediment fence shall be installed per drawing details. Sediment fences shall have adequate support to contain all silt and sediment captured.
13. The standard strength filter fabric shall be fastened securely to stitched loops installed on the upslope side of the posts, and 6 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 30 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
14. Bio-filter bags shall be clean 100 percent wood product waste. Bags shall be 18-inch x 18-inch x 30-inch, weigh approximately 45 lbs., and be contained in a bag made of 1/2-inch plastic mesh.
15. Sediment barriers shall be maintained until the up-slope area has been permanently stabilized. At no time shall more than 10-inches of sediment be allowed to accumulate behind sediment fences. No more than 2 inches of sediment shall be allowed to accumulate behind bio-filter bags. Sediment shall be removed prior to reaching the above stated depths. New sediment barriers shall be installed uphill as required to control sediment transport.
16. Stabilized construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to ensure that all paved areas are kept clean for the duration of the project.
17. The Contractor shall verify that all trucks are well sealed when transporting saturated soils from the site. Water drippage from trucks transporting saturated soils must be reduced to less than 1 gallon per hour prior to leaving the site.
18. The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto the public right-of-way or approved access point. The entrance may require periodic top dressing as conditions demand, and repair and/or cleanout of any structures used to trap sediment.
19. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately, and the Contractor shall provide protection of downstream inlets and catch basins to ensure sediment laden water does not enter the storm drain system.
20. Temporary grass cover measures must be fully established by October 15th, or other cover measures (ie. erosion control blankets with anchors, 3-inches minimum of straw mulch, 6 mil HDPE plastic sheet, etc.) shall be in place over all disturbed soil areas until April 30th. To establish an adequate grass stand for controlling erosion by October 15th, it is recommended that seeding and mulching occur by September 1st. Straw mulch, if used, shall not leave any bare ground visible through the straw.
21. Minimum wet weather slope protection. For slopes steeper than 3H:1V but less than 2H:1V, use Tensar/North American Green Type S150 erosion control blanket. For slopes 2H:1V or steeper, use Tensar/North American Green Type SC150 erosion control blanket. Use a minimum of 2-inches straw mulch or Tensar/North American Green Type S150 for slopes flatter than 3H:1V. Slope protection shall be placed on all disturbed areas immediately after completion of each section of construction activity, until the erosion control seeding has been established. As an option during temporary or seasonal work stoppages, a 6-mil HDPE plastic sheet may be placed on exposed slopes. The plastic sheet shall be provided with an anchor trench at the top and bottom of the slope, and shall be sandbagged on the slopes as required to prevent damage or displacement by wind.
22. Permanent erosion control vegetation on all embankments and disturbed areas shall be re-established as soon as construction is completed.
23. Soil preparation. Topsoil should be prepared according to landscape plans, if available, or recommendations of grass seed supplier. It is recommended that slopes be textured before seeding by rack walking (ie. driving a crawling tractor up and down the slopes to leave a pattern of cleat imprints parallel to slope contours) or other method to provide stable areas for seeds to rest.
24. When used, hydromulch shall be applied with grass seed at a rate of 2000 lbs. per acre between April 30 and June 10, or between September 1 and October 1. On slopes steeper than 10 percent, hydroseed and mulch shall be applied with a bonding agent (tackifier). Application rate and methodology to be in accordance with seed supplier recommendations.
25. When used in lieu of hydromulch, dry, loose, weed free straw used as mulch shall be applied at a rate of 4000 lbs. per acre (double the hydromulch application requirement). Anchor straw by working in by hand or with equipment (rollers, cleat trackers, etc.). Mulch shall be spread uniformly immediately following seeding.
26. When conditions are not favorable to germination and establishment of the grass seed, the Contractor shall irrigate the seeded and mulched areas as required to establish the grass cover.
27. Seeding. Recommended erosion control grass seed mix is as follows. Dwarf grass mix (low height, low maintenance) consisting of dwarf perennial ryegrass (80 % by weight), creeping red fescue (20 % by weight). Application rate shall be 100 lbs. per acre minimum.
28. Grass seed shall be fertilized at a rate of 10 lbs. per 1000 S.F with 16- 16-16 slow release type fertilizer. Development areas within 50 feet of water bodies and wetlands must use a non-phosphorous fertilizer.
29. Prior to starting construction contractor shall acquire the services of a DEQ Certified Erosion and Sediment Control Inspector and shall submit an "Action Plan" to DEQ indentifying their names, contact information, training and experience as required in Schedule A.6.b.i-ii of the 1200-C Permit
30. Contractor shall submit "Notice of Termination" to DEQ to end the 1200-C permit coverage once all soil disturbance activities have been completed and final stabilization of exposed soils has occured.

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER OREGON NOV. 12, 2008 WILLIAM J. WELLS
REVIEW
RENEWS: 6/30/2026

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

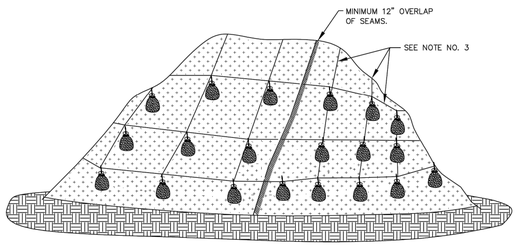
EROSION CONTROL NOTES

DRAWING
C1.2

JOB NUMBER
3547.0000.0

3/10/2025 3:36:27 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Ec Notes and Details.dwg, (C1.2 tab)

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.




PLASTIC SHEETING

NOTES:

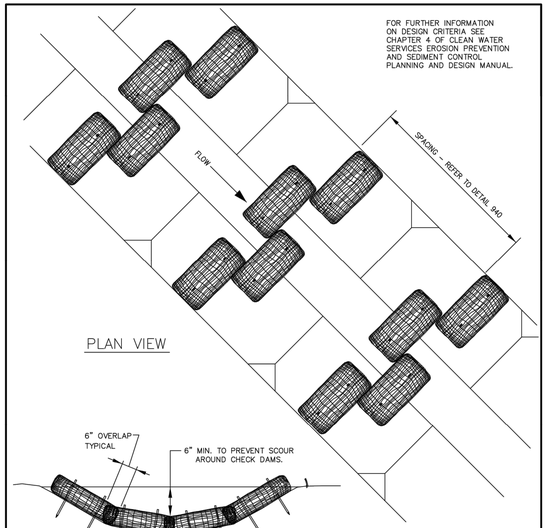
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. PERIMETER SEDIMENT CONTROL BMP TO BE INSTALLED A MIINIMUM OF 3' FROM TOE OF STOCKPILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR APPROVED EQUAL ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.
4. PLASTIC TO EXTEND MINIMUM 1' BEYOND TOE OF SLOPE.
5. AS APPROPRIATE, BMP'S SHALL BE INSTALLED TO CONVEY WATER DISCHARGE FROM STOCKPILE AREAS.

# PLASTIC SHEETING

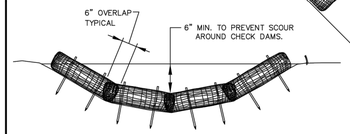
DRAWING NO. 810 REVISED 10-31-19

CleanWater Services

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.




PLAN VIEW




PROFILE

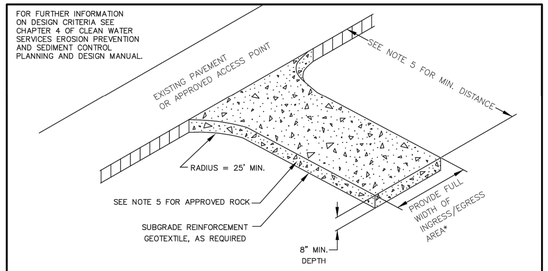
NOTES:

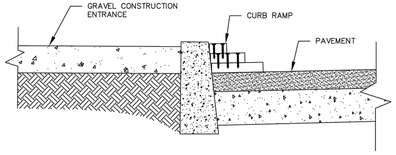
1. STAKING OF BAGS REQUIRED USING (2) 1"X2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. SURFACE MUST BE SMOOTH BEFORE APPLICATION.
3. CHECK DAMS CAN BE CONSTRUCTED USING STRAW WATTLES OR OTHER MATERIALS AS APPROVED BY THE DISTRICT OR CITY.

# CHECK DAM BIO-FILTER BAG

DRAWING NO. 845 REVISED 10-31-19

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.



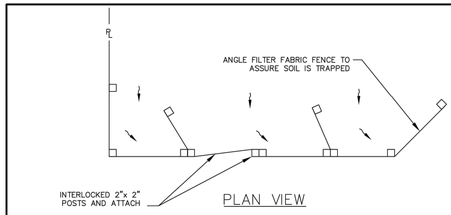

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF- WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.
5. DIMENSIONS
   SINGLE FAMILY
   20' LONG BY 20' WIDE 8" DEEP OF ¾" MINUS CLEAN ROCK.
   COMMERCIAL/SITE DEVELOPMENT
   50' LONG BY 20' WIDE 3-6" CLEAN ROCK, GOVERNING AUTHORITY MAY REQUIRE GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.

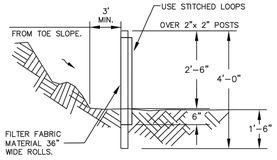
# CONSTRUCTION ENTRANCE

DRAWING NO. 855 REVISED 10-31-19

CleanWater Services



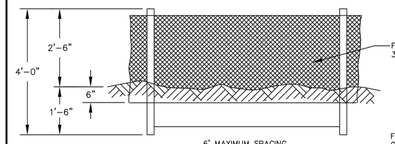

PLAN VIEW




PROFILE

NOTES:

1. SEDIMENT FENCE TO HAVE STITCHED LOOPS AROUND 2" x 2" POSTS.
2. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
3. 2"x 2" FIR, PINE OR STEEL FENCE POSTS.
4. POSTS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
5. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
6. PANELS MUST BE PLACED ACCORDING TO SPACING ON DRAWING NO. 940.




FRONT VIEW

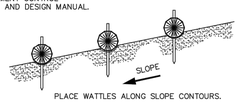
FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

# SEDIMENT FENCE

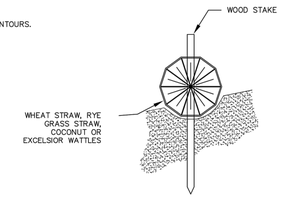
DRAWING NO. 875 REVISED 10-31-19

CleanWater Services

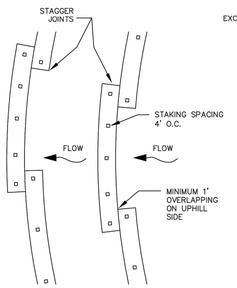
FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.




PROFILE




SECTION




PLAN VIEW

NOTES:

1. STAKING SPECIFICATIONS:
   a. 1"X2" WOODEN STAKES
   b. ADDITIONAL STAKES MAY BE INSTALLED ON DOWNHILL SIDE OF WATTLES, ON STEEP SLOPE OR HIGHLY EROSIVE SOILS.
2. SPACING IN ACCORDANCE WITH DETAIL 940.
3. REMOVE ALL ROCKS, CLODS, VEGETATION OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED WATTLES WILL HAVE DIRECT CONTACT WITH THE SOIL.
4. INSTALL THE WATTLES IN A 2" DEEP TRENCH, INSURING THAT NO GAPS EXIST BETWEEN THE SOIL AND THE BOTTOM OF THE WATTLE. THE ENDS OF ADJACENT WATTLES SHALL BE OVERLAPPED 1 FT. MINIMUM TO PREVENT SEDIMENT PASSING THROUGH THE FIELD JOINT.

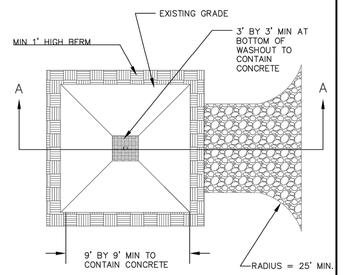
# WATTLES

DRAWING NO. 880 REVISED 10-31-19

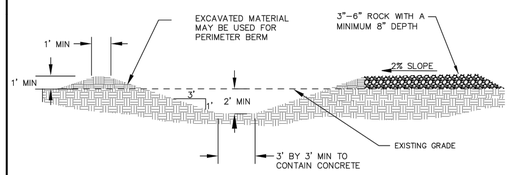
CleanWater Services

NOTES:

1. WASHOUT FACILITIES SHALL BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 12 INCHES.
2. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.
3. IF THE WASHOUT IS NEARING CAPACITY, VACUUM AND DISPOSE OF THE WASTE MATERIAL IN AN APPROVED MANNER.
4. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE LOCATED A MINIMUM OF 50 FT FROM SENSITIVE AREAS INCLUDING OPEN DRAINAGE FACILITIES AND WATER SOURSES.
5. CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
6. INSTALL CONCRETE WASHOUT SIGN WITHIN 30 FEET OF TEMPORARY CONCRETE WASHOUT FACILITY.
7. TEMPORARY CONCRETE WASHOUTS MAY BE A PREFABRICATED CONTAINER THAT IS PORTABLE AND REUSABLE.




PLAN

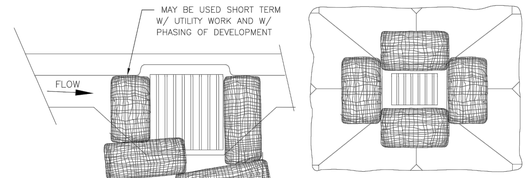



SECTION A-A

# CONCRETE WASHOUT

DRAWING NO. 900 REVISED 10-31-19

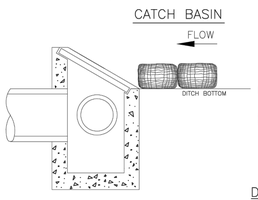
CleanWater Services



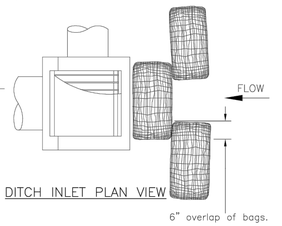

CATCH BASIN



AREA DRAIN




DITCH INLET




DITCH INLET PLAN VIEW

NOTES:

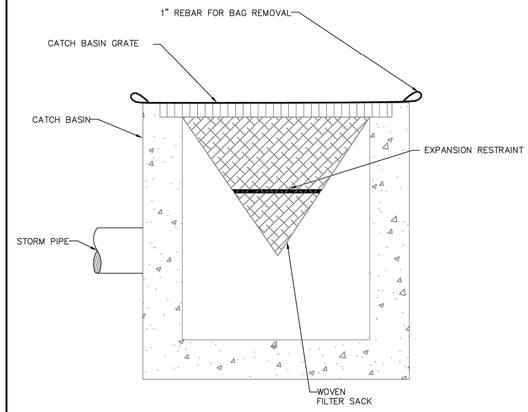
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. WHEN USING 30" BIO-BAGS TO PROTECT A CATCH BASIN YOU HAVE 4 BAGS AND THEY SHALL BE OVERLAPPED BY 6".

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

# INLET PROTECTION TYPE 4

DRAWING NO. 915 REVISED 10-31-19

CleanWater Services




CATCH BASIN INSERT

NOTE:

1. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER FABRIC INLET SACKS TO BE DETERMINED BY MANUFACTURER.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

# INLET PROTECTION TYPE 5

DRAWING NO. 920 REVISED 10-31-19

CleanWater Services

| BY | DESCRIPTION | DATE | NO. |
|---|---|---|---|
| | REVISIONS | | 1 |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
REVIEW
RENEWS: 6/30/2026


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

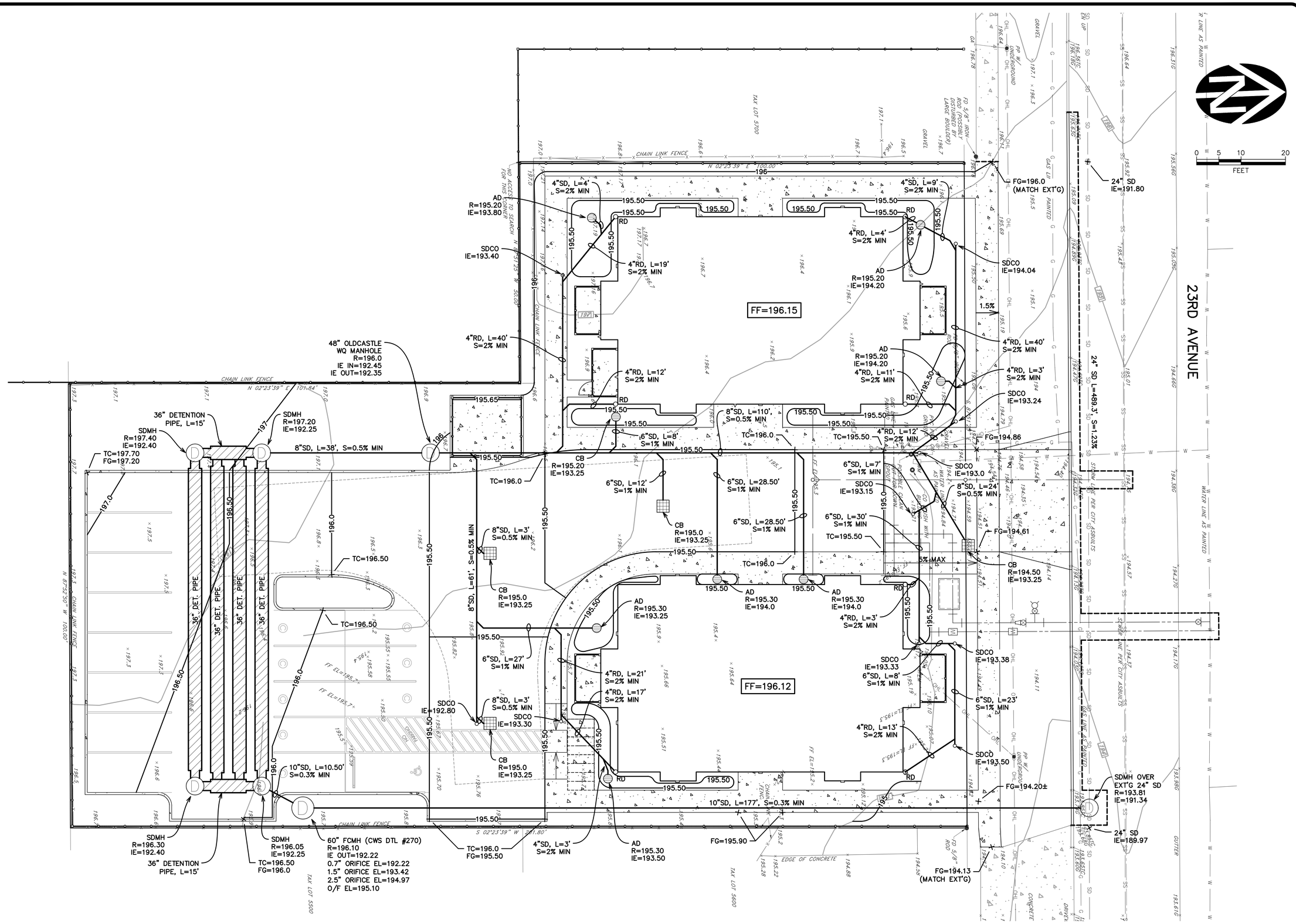

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

EROSION CONTROL DETAILS

DRAWING
C1.3

JOB NUMBER
3547.0000.0

3/10/2025 3:36:28 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Ec Notes and Details.dwg, (C1.3 tab)




| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | | REVISIONS | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026

REVIEW


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

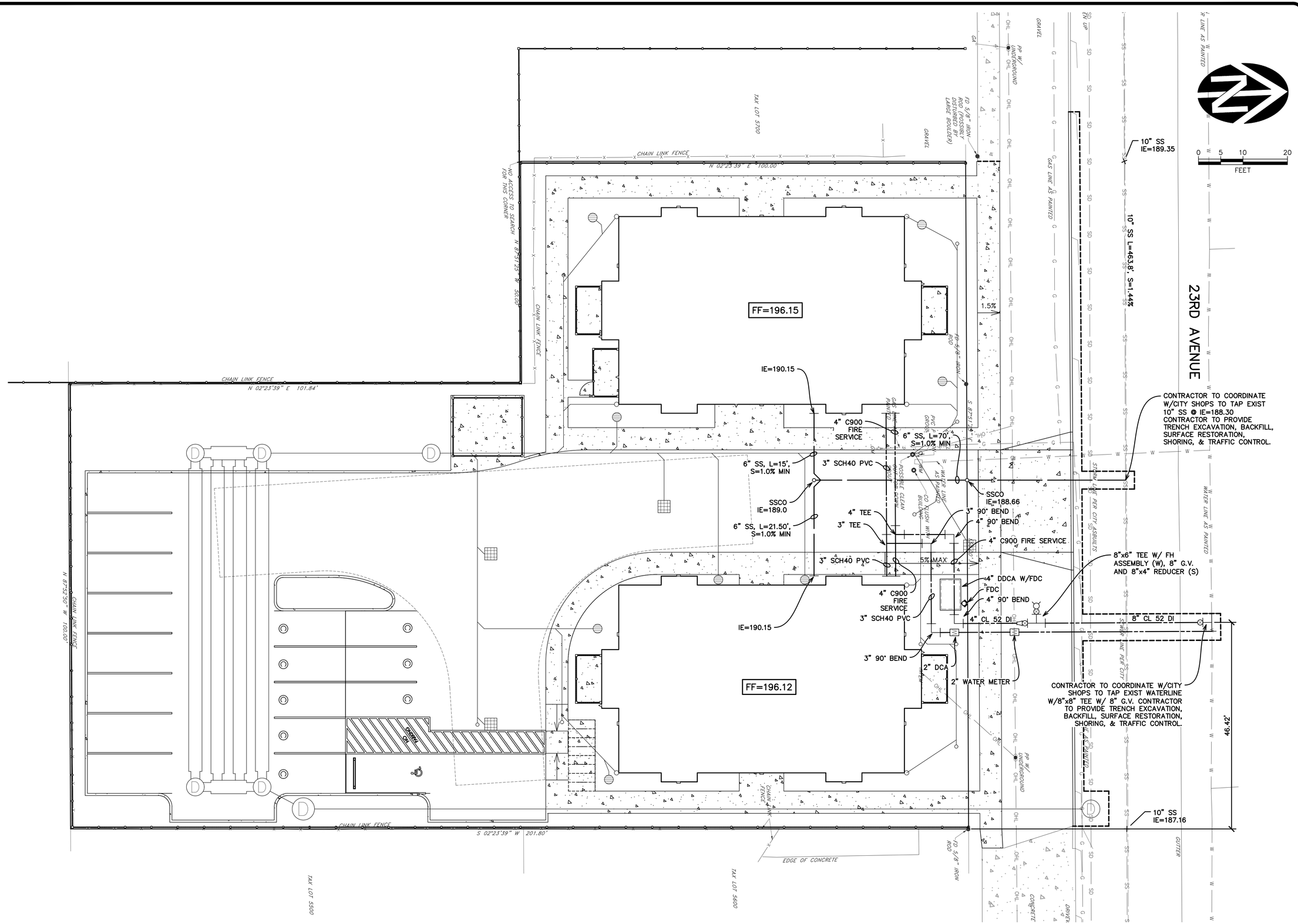

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# GRADING AND DRAINAGE PLAN

DRAWING
C2.0

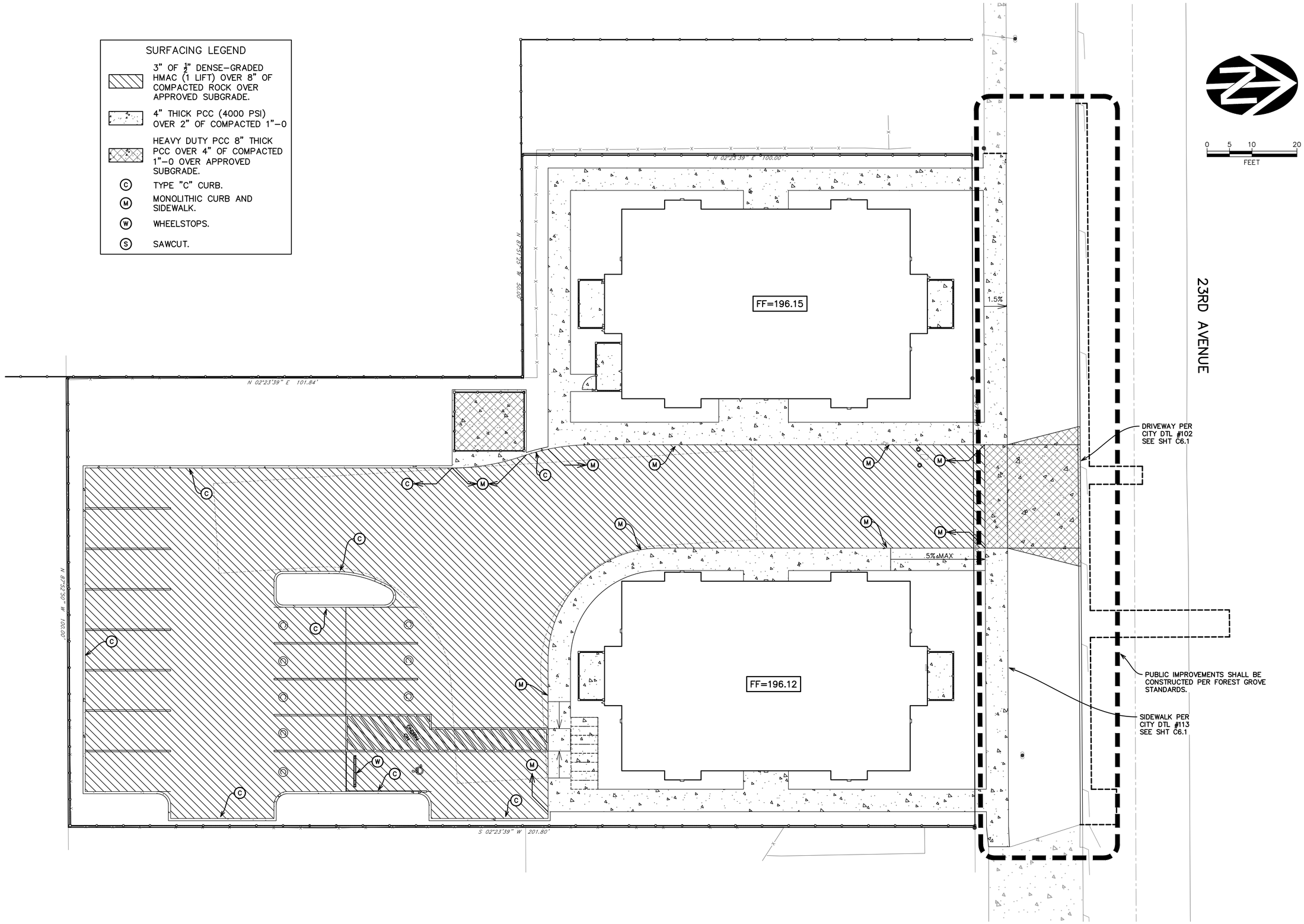
JOB NUMBER
3547.0000.0

3/10/2025 3:36:40 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Grading and Drainage Plan.dwg, (C2.0 tab)


FF=196.15
FF=196.12
IE=190.15
IE=190.15
4" C900 FIRE SERVICE
6" SS, L=70', S=1.0% MIN
3" SCH40 PVC
6" SS, L=15', S=1.0% MIN
SSCO IE=189.0
6" SS, L=21.50', S=1.0% MIN
SSCO IE=188.66
3" 90° BEND
4" 90° BEND
4" TEE
3" TEE
4" C900 FIRE SERVICE
3" SCH40 PVC
5% MAX
4" DDCA W/FDC
FDC
4" 90° BEND
4" CL 52 DI
8"x6" TEE W/ FH ASSEMBLY (W), 8" G.V. AND 8"x4" REDUCER (S)
8" CL 52 DI
3" 90° BEND
2" DCA
2" WATER METER
10" SS IE=189.35
10" SS L=463.8', S=1.44%
10" SS IE=187.16
CONTRACTOR TO COORDINATE W/CITY SHOPS TO TAP EXIST 10" SS @ IE=188.30 CONTRACTOR TO PROVIDE TRENCH EXCAVATION, BACKFILL, SURFACE RESTORATION, SHORING, & TRAFFIC CONTROL.
CONTRACTOR TO COORDINATE W/CITY SHOPS TO TAP EXIST WATERLINE W/8"x8" TEE W/ 8" G.V. CONTRACTOR TO PROVIDE TRENCH EXCAVATION, BACKFILL, SURFACE RESTORATION, SHORING, & TRAFFIC CONTROL.
23RD AVENUE
CHAIN LINK FENCE N 02°23'39" E 100.00'
CHAIN LINK FENCE N 02°23'39" E 101.84'
CHAIN LINK FENCE S 02°23'39" W 201.80'
CHAIN LINK FENCE N 87°36'21" W 90.00'
CHAIN LINK FENCE N 87°25'28" W 100.00'
NO ACCESS TO SEARCH FOR THIS CORNER
PP W/ UNDERGROUND
PP W/ UNDERGROUND
FD 5/8" IRON ROD
FD 5/8" IRON ROD
FD 5/8" IRON ROD (POSSIBLY DISTURBED BY LARGE BOULDER)
TAX LOT 5700
TAX LOT 5500
TAX LOT 5600
GRAVEL
GRAVEL
GAS LINE AS PAINTED
GAS LINE AS PAINTED
WATER LINE AS PAINTED
WATER LINE AS PAINTED
STORM LINE AS PAINTED
PER CITY SURVEY
PER CITY SURVEY
PER CITY SURVEY

## SURFACING LEGEND

- 3" OF ½" DENSE-GRADED HMAC (1 LIFT) OVER 8" OF COMPACTED ROCK OVER APPROVED SUBGRADE.
- 4" THICK PCC (4000 PSI) OVER 2" OF COMPACTED 1"-0
- HEAVY DUTY PCC 8" THICK PCC OVER 4" OF COMPACTED 1"-0 OVER APPROVED SUBGRADE.
- (C) TYPE "C" CURB.
- (M) MONOLITHIC CURB AND SIDEWALK.
- (W) WHEELSTOPS.
- (S) SAWCUT.




| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |
| 1 | | | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY 1"

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026

REVIEW


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# SURFACING PLAN

DRAWING
C4.0

JOB NUMBER
3547.0000.0

3/10/2025 3:36:57 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Surfacing Plan.dwg, (C4.0 tab)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

| | | | |
|---|---|---|---|
| DSN. | JW | | |
| DRN. | IH | 1 | |
| CKD. | JW | NO. | DATE |

DESCRIPTION
REVISIONS
BY

REVIEW

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

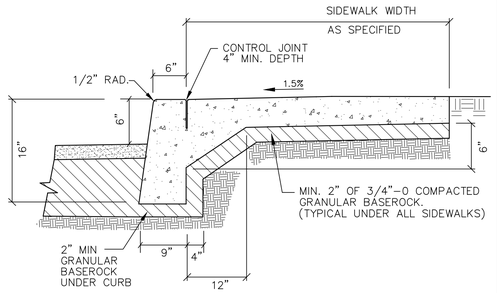

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# CONSTRUCTION NOTES

DRAWING
C5.0

JOB NUMBER
3547.0000.0

3/10/2025 3:37:01 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Notes and Details.dwg, (C5.0 tab)




## TYPICAL SECTION

NTS

NOTES:

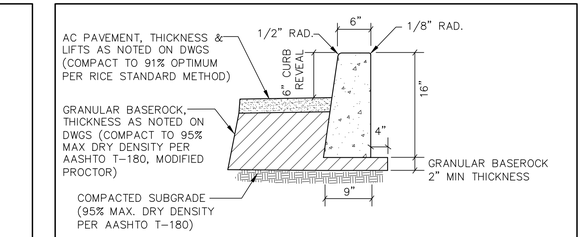
1. CONCRETE THICKNESS. 4" MIN. CONCRETE THICKNESS FOR STANDARD SIDEWALKS. 6" MIN CONCRETE THICKNESS THROUGH RESIDENTIAL DRIVEWAYS (INCLUDING WINGS). 8" MIN CONCRETE THICKNESS THROUGH COMMERCIAL/INDUSTRIAL DRIVEWAYS & ALLEY APPROACHES.
2. CONCRETE SHALL BE 3300 PSI @ 28 DAYS, MAX 5" SLUMP, 4.5% AIR (±1.5%).
3. INSTALL TOOLED CONTRACTION JOINTS AT 5' INTERVALS. SIDEWALKS 10' & WIDER SHALL HAVE A LONGITUDINAL CONTRACTION JOINT AT 5' MAX ON CENTER.
4. INSTALL AT LEAST 2 WEEP HOLES ON ALL LOTS. IN ADDITION TO WEEPHOLES AT DRIVEWAY WINGS, INSTALL ONE WEEPHOLE AT LOW POINT OF LOT, 5' MAX FROM P/L.
5. A CONTRACTION JOINT SHALL BE PLACED ALONG AND OVER WEEPHOLE & DRAIN PIPE.
6. SIDEWALKS SHALL BE LOCATED ENTIRELY WITHIN PRIVATE RIGHT-OF-WAYS OR SIDEWALK EASEMENTS, INCLUDING SIDEWALKS AT DRIVEWAY APRONS.

| LAST REVISION DATE: | JO # |
|---|---|
| JAN 2024 | STANDARD |

**MONOLITHIC CURB AND PRIVATE SIDEWALK**

(NTS)

| WESTECH ENG. | DETAIL NO. 2112 |
|---|---|




## PAVEMENT/TYPE "C" CURB DETAIL

NTS

SEE PLAN

NOTES:

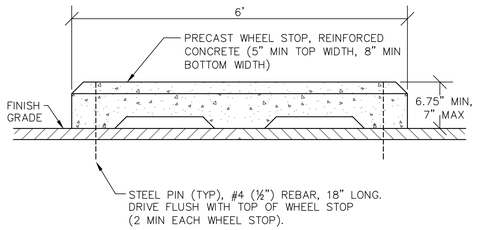
1. SEE GRADING PLAN OR SURFACING PLAN FOR LOCATION OF LIGHT AND HEAVY DUTY PAVEMENT, AS WELL AS PAVEMENT & BASEROCK THICKNESSES.
2. DESIGN SUBGRADES SHALL BE COMPACTED AND PROOF-ROLLED PRIOR TO PLACEMENT OF BASEROCK. IF SUBGRADE PASSES PROOF-ROLL BUT FAILS DENSITY TESTING, MIN. 4.5 OZ NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED ON SUBGRADE PRIOR TO PLACEMENT OF BASEROCK. FAILURE OF PROOF-ROLL WILL REQUIRE OVEREXCAVATION.
3. IF SUBGRADE FAILS THE PROOF-ROLL, SUBGRADE SHALL BE OVEREXCAVATED TO UNDISTURBED SOIL AND BACKFILLED WITH BASEROCK OVER MIN. 8.0-OZ. NON-WOVEN FABRIC AS REQUIRED TO ALLOW COMPACTION OF UPPER (DESIGN) BASEROCK SECTION AND TO MAINTAIN STRUCTURAL INTEGRITY OF NATIVE SUBGRADE SOILS. TYPICAL MIN. OVEREXCAVATION REQUIRED IS 12-INCHES. NO RUBBER TIRED EQUIPMENT ALLOWED ON SUBGRADE FOLLOWING OVEREXCAVATION.
4. SUBGRADE TO BE PROOFROLLED IMMEDIATELY PRIOR TO PLACING BASEROCK. BASEROCK TO BE PROOFROLLED IMMEDIATELY PRIOR TO PAVING.
5. CONTRACTION JOINTS SHALL BE PLACED AT 15' MIN. INTERVALS AND SHALL EXTEND AT LEAST 50% THROUGH THE CURB SECTION.
6. CURBS TO CURE A MINIMUM OF 7 DAYS PRIOR TO PLACING FINAL BASEROCK AND PAVING. USE TYPE 1 OR 1-D CLEAR CURING COMPOUND.
7. ALL CONCRETE SHALL BE 3300 PSI @ 28 DAYS, MAX 5" SLUMP, 4.5% AIR (±1.5%).

| LAST REVISION DATE: | JO # |
|---|---|
| FEB 2024 | X |

**PAVEMENT AND TYPE 'C' CURB DETAIL**

(NTS)

| WESTECH ENG. | DETAIL NO. 2390 |
|---|---|




## SECTION

NTS

NOTES:

1. SEE DRAWINGS FOR LOCATION & NUMBER OF WHEEL STOPS, INCLUDING DIMENSION FROM CURB, EDGE OF PAVEMENT OR BUILDING AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED OR SHOWN ON SITE PLAN, SET WHEEL STOPS 2 FEET FROM FACE OF CURB OR EDGE OF PAVEMENT, MEASURED FROM THE FACE OF THE WHEEL STOP (VEHICLE SIDE) TO FACE OF CURB (OR EDGE OF PAVEMENT). SET BACK FROM PROPERTY LINES PER CITY STANDARDS (3' MIN). MIN SETBACK FROM BUILDINGS AS SHOWN ON DWGS.

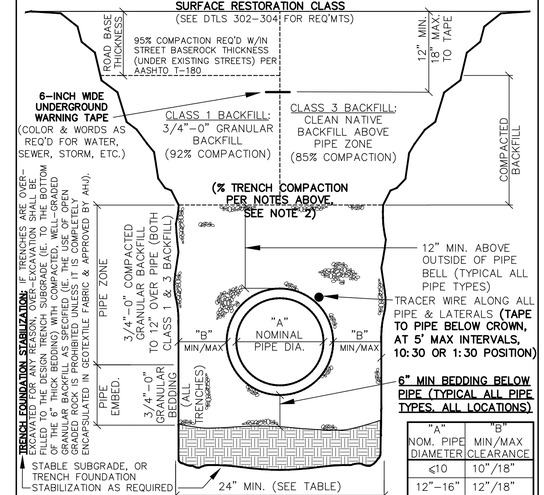
| LAST REVISION DATE: | JO # |
|---|---|
| FEB 2024 | STANDARD |

**PRECAST WHEELSTOP DETAIL**

(NTS)

| WESTECH ENG. | DETAIL NO. 2396 |
|---|---|

TRENCH COMPACTION: CLASS 1 GRANULAR BACKFILL – 92% OPTIMUM PER AASHTO T-180 (MODIFIED PROCTOR)
CLASS 3 NATIVE BACKFILL – 85% OPTIMUM PER AASHTO T-180




| "A" NOM. PIPE DIAMETER | "B" MIN/MAX CLEARANCE |
|---|---|
| ≤10 | 10"/18" |
| 12"-16" | 12"/18" |
| 18"-21" | 16"/24" |
| 24"-30" | 18"/30" |
| >30" | 24"/36" |

(SEE NOTE 5)

NOTES:

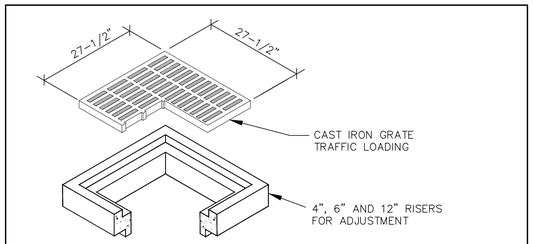
1. CLASS 1 GRANULAR BACKFILL REQUIRED UNDER ALL EXISTING OR FUTURE IMPROVED AREAS, INCLUDING STREETS, SHOULDERS, PARKING, SIDEWALKS, ETC.
2. SUBMIT WRITTEN BACKFILL COMPACTION TEST RESULTS PRIOR TO INSTALLING AC PAVEMENT OR CONCRETE SURFACE RESTORATION.
3. WHERE NEW PIPING IS IN SAME ALIGNMENT AS EXISTING PIPING, GRANULAR PIPE EMBEDMENT SHALL EXTEND TO A MIN. OF 6" BELOW THE NEW PIPING OR 6" BELOW EXISTING PIPING, WHICHEVER IS DEEPER.
4. SHORING NOTE, PIPE ZONE: FOR FLEXIBLE PIPE, BOTTOM OF TRENCH SHORING SHALL BE ABOVE PIPE SPRINGLINE PRIOR TO COMPACTING BACKFILL BELOW THE PIPE SPRINGLINE AND UNDER THE PIPE HAUNCHES (TO AVOID LOSS OF PIPE SIDE SUPPORT).
5. MINIMUM CLEARANCES SHOWN ("B") ASSUMES STANDARD 6" WALL TRENCH BOXES SET ON TRENCH BOTTOM, AND REPRESENTS WIDTH REQUIRED TO CONSOLIDATE GRANULAR MATERIAL UNDER PIPE HAUNCHES (TO AVOID LOSS OF SIDE SUPPORT WHEN TRENCH BOX IS MOVED OR PULLED FORWARD). TRENCH WIDTH REDUCTION REQUIRES PRIOR APPROVAL BASED ON ACTUAL TRENCH SHORING PROPOSED.

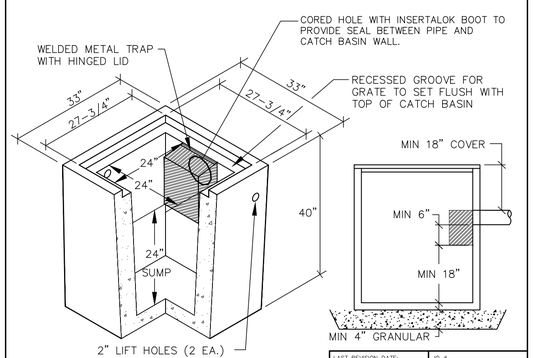
| LAST REVISION DATE: | STANDARD |
|---|---|
| MAR 2024 | |

**TRENCH BACKFILL, BEDDING, AND PIPE ZONE**

(NTS)

| WESTECH ENG. | DETAIL NO. 3010 |
|---|---|




NOTES:

1. SEE CONSTRUCTION DRAWINGS FOR PIPE SIZE, LOCATION AND INVERT ELEVATION.
2. CONCRETE SHALL BE 4000 PSI @ 28 DAYS.
3. SET CB SQUARE WITH BUILDINGS OR WITH EDGE OF PARKING LOT, ALLEY OR DRIVEWAY WHEREIN IT LIES.
4. ADJUST PAVING SO WATER FLOWS TO CB WITH NO PONDING.

| LAST REVISION DATE: | JO # |
|---|---|
| MAR 2024 | STANDARD |

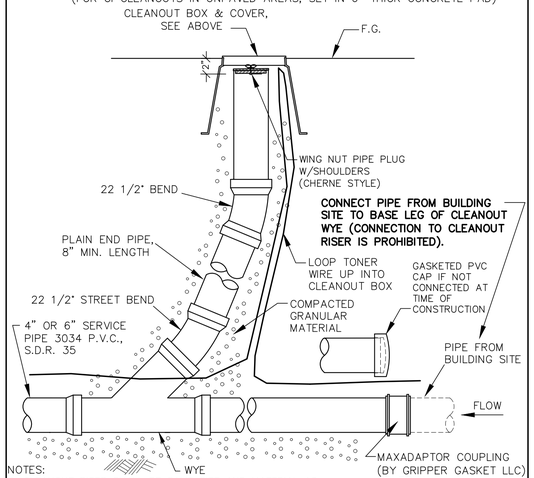
**PARKING LOT CATCH BASIN or PUBLIC ALLEY CATCH BASIN (PRECAST CONCRETE)**

(NTS)

| WESTECH ENG. | DETAIL NO. 3150 |
|---|---|

CLEANOUT COVERS: ALL SEWER CLEANOUT LIDS TO READ "SEWER".
ALL STORM CLEANOUT LIDS TO READ "STORM" OR "C/O".

1. NON-TRAFFIC AREAS:
   CARSON MODEL 910 T-COVER OR EQUAL (GREEN FOR SEWER, GREY FOR STORM).
2. TRAFFIC AREAS, INCLUDING DRIVEWAYS:
   8" X 4" CAST IRON FRAME & COVER, OLYMPIC M1007 OR EQUAL.
   8" X 6" CAST IRON FRAME & COVER, OLYMPIC M1018 OR EQUAL.
   (FOR CI CLEANOUTS IN UNPAVED AREAS, SET IN 6" THICK CONCRETE PAD)




NOTES:

1. CLEANOUT RISER SHALL BE SAME SIZE AND MATERIAL AS LATERAL PIPE.
2. PROVIDE CONCRETE PAD FOR CLEANOUTS LOCATED IN UNPAVED DRIVEWAYS OR TRAFFIC AREAS (6" THICK PAD TO BE 6" LARGER THAN CLEANOUT BOX FRAME ON ALL SIDES).
3. CLEANOUT PIPE SHALL BE LEFT A MINIMUM OF 18" ABOVE EXISTING GRADE UNTIL ALL CURBING IS INSTALLED AND ALL PRIVATE UTILITY TRENCHES ARE BACKFILLED. CLEANOUTS SHALL THEN BE SET NO MORE THAN 6" BELOW FINISH GRADE, AND CLEANOUT BOXES SET FLUSH WITH FINISH GRADE.

| LAST REVISION DATE: | JO # |
|---|---|
| MAY 2024 | STANDARD |

**STANDARD SERVICE LATERAL CLEANOUT (ON PRIVATE PROPERTY)**

(NTS)

| WESTECH ENG. | DETAIL NO. 4161 |
|---|---|

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
REVIEW
RENEWS: 6/30/2026


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

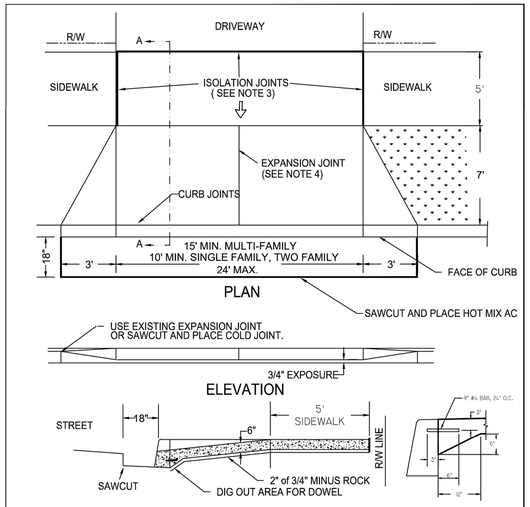

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# CONSTRUCTION DETAILS (WESTECH)

DRAWING
C6.0

JOB NUMBER
3547.0000.0

3/10/2025 3:37:01 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Notes and Details.dwg, (C6.0 tab)




## SECTION A-A

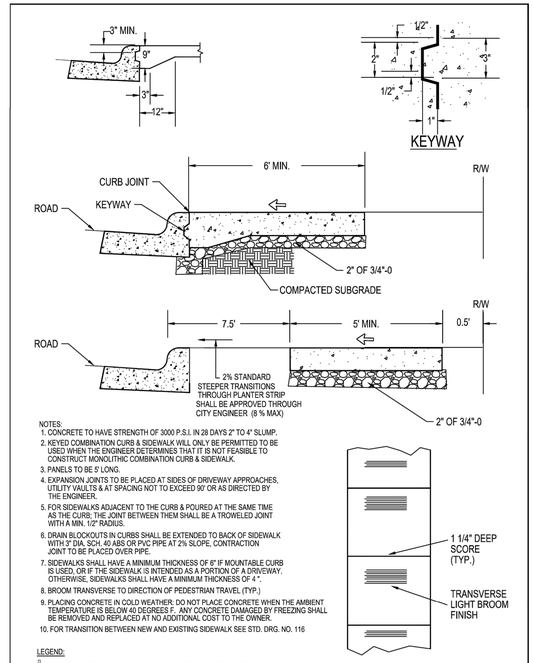
NOTES:

1. CONCRETE TO HAVE STRENGTH OF 3000 P.S.I. IN 28 DAYS.
2. CURB JOINT SHALL BE A TROWELED JOINT WITH A MINIMUM 1/2" RADIUS ALONG BACK OF CURB.
3. ISOLATION JOINTS SHALL BE 1/2" PREMOLDED ASPHALT IMPREGNATED MATERIAL EXTENDING FROM SUBGRADE TO FINISHED GRADE, NO WOOD PRODUCTS ALLOWED.
4. EXPANSION JOINT SPACING SHALL BE A MAXIMUM OF 12'.
5. SUB GRADE SHALL BE FIRM WITH NO SOFT SPOTS WITH A MINIMUM OF 2" OF 3/4-0" ROCK.
6. STEEL TIES 9" LONG DRILL HOLE 3" INTO EXISTING CURB 4# BAR 24" ON CENTER.

LEGEND:

⇩ CROSS SLOPE 1.5% MAX (MAX 2.0 % FINISHED SURFACE SLOPE)

| FOREST GROVE OREGON | RESIDENTIAL DRIVEWAY WITH STREET SAW CUT | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 102 |
|---|---|---|---|
| | | | SCALE NONE |
| | 1w2k\eng\Eng Dept\STANDARD DETAILS\100s SIDEWALKS\RESIDENTIAL DRIVEWAY W SAW CUT.dwg | | LAST REV. 7/20/22 |



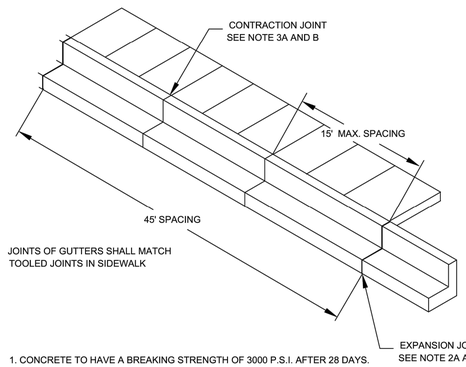

NOTES:

1. CONCRETE TO HAVE STRENGTH OF 3000 P.S.I. IN 28 DAYS 2" TO 4" SLUMP.
2. KEYED COMBINATION CURB & SIDEWALK WILL ONLY BE PERMITTED TO BE USED WHEN THE ENGINEER DETERMINES THAT IT IS NOT FEASIBLE TO CONSTRUCT MONOLITHIC COMBINATION CURB & SIDEWALK.
3. PANELS TO BE 5' LONG.
4. EXPANSION JOINTS TO BE PLACED AT SIDES OF DRIVEWAY APPROACHES, UTILITY VAULTS & AT SPACING NOT TO EXCEED 90' OR AS DIRECTED BY THE ENGINEER.
5. FOR SIDEWALKS ADJACENT TO THE CURB & POURED AT THE SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MIN. 1/2" RADIUS.
6. DRAIN BLOCKOUTS IN CURBS SHALL BE EXTENDED TO BACK OF SIDEWALK WITH 3" DIA. SCH. 40 ABS OR PVC PIPE AT 2% SLOPE, CONTRACTION JOINT TO BE PLACED OVER PIPE.
7. SIDEWALKS SHALL HAVE A MINIMUM THICKNESS OF 8" IF MOUNTABLE CURB IS USED, OR IF THE SIDEWALK IS INTENDED AS A PORTION OF A DRIVEWAY. OTHERWISE, SIDEWALKS SHALL HAVE A MINIMUM THICKNESS OF 4 ".
8. BROOM TRANSVERSE TO DIRECTION OF PEDESTRIAN TRAVEL (TYP.)
9. PLACING CONCRETE IN COLD WEATHER: DO NOT PLACE CONCRETE WHEN THE AMBIENT TEMPERATURE IS BELOW 40 DEGREES F. ANY CONCRETE DAMAGED BY FREEZING SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.
10. FOR TRANSITION BETWEEN NEW AND EXISTING SIDEWALK SEE STD. DRG. NO. 116

LEGEND:

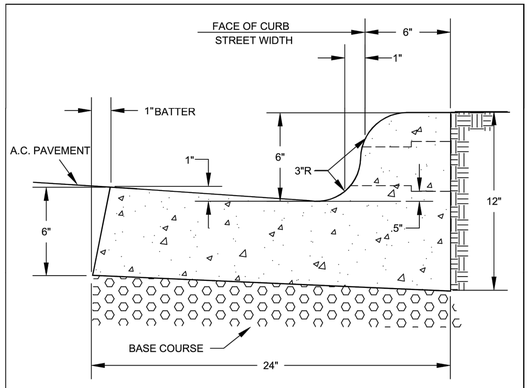
⇩ CROSS SLOPE 1.5% MAX (MAX 2.0 % FINISHED SURFACE SLOPE)

| FOREST GROVE OREGON | CONCRETE SIDEWALK | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 113 |
|---|---|---|---|
| | | | SCALE NONE |
| | 1w2k\eng\Eng Dept\STANDARD DETAILS\100s SIDEWALKS\SIDEWALK.dwg | | LAST REV. 7/20/22 |



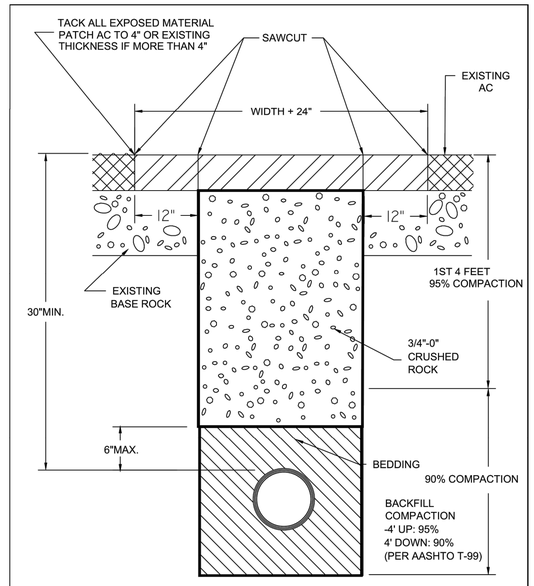

1. CONCRETE TO HAVE A BREAKING STRENGTH OF 3000 P.S.I. AFTER 28 DAYS.
2. EXPANSION JOINTS
   A. TO BE PROVIDED:
      1) AT EACH POINT OF TANGENCY OF THE CURB.
      2) AT EACH COLD JOINT.
      3) AT EACH SIDE OF INLET STRUCTURES.
      4) AT EACH END OF DRIVEWAYS.
      5) AT LOCATIONS NECESSARY TO LIMIT SPACING TO 45 FEET.
   B. MATERIAL TO BE PRE-MOLDED, ASPHALT IMPREGNATED, NON-EXTRUDING, WITH A THICKNESS OF 1/2 INCH.
3. CONTRACTION JOINTS
   A. SPACING TO BE NOT MORE THAN 15 FEET.
   B. THE DEPTH OF JOINT SHALL BE AT LEAST 1 1/2 INCHES.
4. BASE ROCK-2"-0 OR 3/4"-0, 95% COMPACTION. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURE OR 4" IN DEPTH, WHICHEVER IS GREATER.
5. DRAINAGE BLOCKOUT- 3" DIAMETER SCH 40 PVC OR ABS PIPE.
   A. I.D. PIPE WITH COUPLING
   B. DRAINAGE ACCESS THROUGH EXISTING CURBS SHALL BE CORE DRILLED OR CURB SAW CUT VERTICALLY 18" EACH SIDE OF DRAIN AND REPOURED TO FULL DEPTH OF CURB.
6. JOINTS IN CURB AND JOINTS IN CURB SIDE WALK SHOULD LINE UP WHERE POSSIBLE.

| FOREST GROVE OREGON | CURB & GUTTER JOINT SPACING | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 302 |
|---|---|---|---|
| | | | SCALE NONE |
| | 1w2k\eng\Eng Dept\STANDARD DETAILS\300s STREETS\CURB & GUTTER JOINT SPACING.dwg | | LAST REV. 7/20/22 |



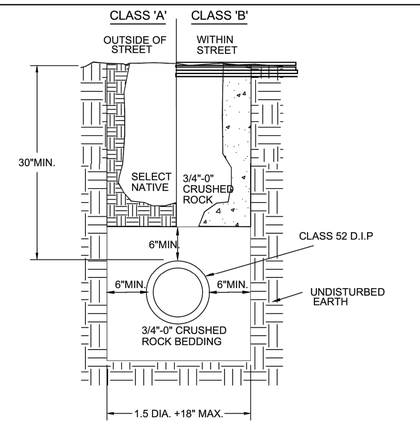

1. CONCRETE TO HAVE A BREAKING STRENGTH OF 3000 P.S.I. AFTER 28 DAYS.
2. EXPANSION JOINTS
   A. TO BE PROVIDED:
      1) AT EACH POINT OF TANGENCY OF THE CURB.
      2) AT EACH COLD JOINT.
      3) AT EACH SIDE OF INLET STRUCTURES.
      4) AT EACH END OF DRIVEWAYS.
      5) AT LOCATIONS NECESSARY TO LIMIT SPACING TO 45 FEET.
   B. MATERIAL TO BE PRE-MOLDED, ASPHALT IMPREGNATED, NON-EXTRUDING, WITH A THICKNESS OF 1/2 INCH.
3. CONTRACTION JOINTS
   A. SPACING TO BE NOT MORE THAN 15 FEET.
   B. THE DEPTH OF JOINT SHALL BE AT LEAST 1 1/2 INCHES.
4. BASE ROCK-2"-0 OR 3/4"-0, 95% COMPACTION. BASE ROCK SHALL BE TO SUBGRADE OF STEEL STRUCTURE OR 4" IN DEPTH, WHICHEVER IS GREATER.
5. DRAINAGE BLOCKOUT- 3" DIAMETER SCH 40 PVC OR ABS PIPE.
   A. I.D. PIPE WITH COUPLING
   B. DRAINAGE ACCESS THROUGH EXISTING CURBS SHALL BE CORE DRILLED OR CURB SAW CUT VERTICALLY 18" EACH SIDE OF DRAIN AND REPOURED TO FULL DEPTH OF CURB.

| FOREST GROVE OREGON | EMERGENCY MOUNTABLE P.C.C. CURB & GUTTER | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 304 |
|---|---|---|---|
| | | | SCALE NONE |
| | 1w2k\eng\Eng Dept\STANDARD DETAILS\300s STREETS\EMERGENCY MOUNTABLE P.C.C. CURB & GUTTER.DWG | | LAST REV. 7/20/22 |




NOTES: T-CUT TO BE DONE AFTER EXCAVATION AND BACKFILL OF TRENCH
AC DESIGN: LEVEL 2 HMAC (LEVEL 3 Moderate Truck Traffic)

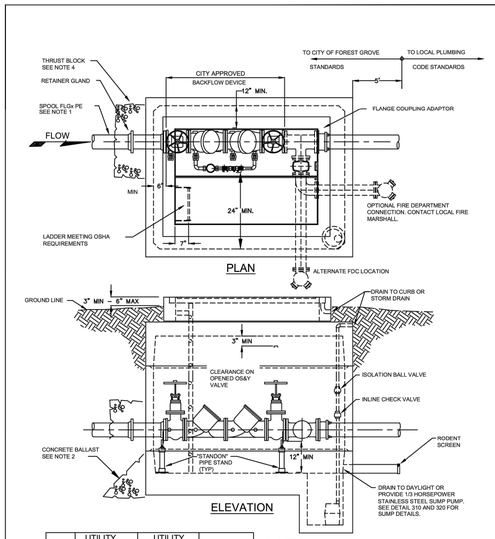
| FOREST GROVE OREGON | T-CUT ASPHALT REPAIR OVER TRENCH | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 311 |
|---|---|---|---|
| | | | SCALE NONE |
| | 1w2k\eng\Eng Dept\STANDARD DETAILS\300s STREETS\T-CUT ASPHALT REPAIR OVER TRENCH.DWG | | LAST REV. 7/20/22 |




NOTES:

1. SEE STANDARD WATER CONSTRUCTION NOTES FOR MORE DETAILS.
2. WATER MAINS SHALL BE PUSH-ON RESTRAINED JOINT DUCTILE IRON PIPE THAT IS CEMENT-MORTAR LINED, SHALL CONFORM WITH ANSI A21.6 AND ANSI A21.11, AND SHALL BE U.S. TYTON JOINT, AS MANUFACTURED BY UNITED STATES PIPE AND FOUNDRY COMPANY AND PACIFIC STATES CAST IRON COMPANY, OR OTHER MANUFACTURES APPROVED BY THE CITY. THE TYPE AND THICKNESS CLASS SHALL BE PIPE CLASS 52 FOR PIPE DIAMETERS OF 10" AND SMALLER, PIPE CLASS 51 FOR PIPE DIAMETERS BETWEEN 12" AND 16", AND PIPE CLASS 50 FOR DIAMETERS OF 18" AND LARGER. ALL PUSH-ON GASKETS SHALL BE FIELD LOK 350 RESTRAINING GASKETS DESIGNED FOR USE WITH TYTON JOINT MANUFACTURED PIPE OR PUSH-ON RESTRAINING GASKETS DESIGNED FOR USE WITH THE JOINT TYPE OF THE ALTERNATIVE PIPE MANUFACTURER APPROVED BY THE CITY. PUSH-ON RESTRAINED GASKETS SHALL CONFORM TO ANSI/AWWA C11/A21.11. GASKETS FOR PIPE SIZES 4-INCH TO 12-INCH SHALL BE RATED FOR 350 psi. GASKETS FOR 18-INCH TO 24-INCH PIPES SHALL BE RATED FOR 250 PSI. A NON-TOXIC VEGETABLE SOAP LUBRICANT SHALL BE SUPPLIED FROM THE PIPE MANUFACTURER IN SUFFICIENT QUANTITIES FOR INSTALLING THE PIPE FURNISHED.
3. ALL JOINTS (TEES, ELBOWS, BENDS AND BLOW OFFS) TO BE MECHANICALLY RESTRAINED (MEGALUG, FIELD LOK-GRIP RING, OR TUFGRIP). THRUST BLOCKS SHALL NOT BE USED.
4. CITY OF FOREST WATER LINE CORROSION CONTROL METHOD IS AS FOLLOWS:
   A. MIN. 3/4"-0" ROCK BEDDING EXTENDING A MINIMUM OF 6 INCHES IN ALL DIRECTIONS FROM OUTERMOST PORTIONS OF PIPE EXTERIOR
   B. SERVICES SHALL HAVE FULL SAND ENCASEMENT TO PROTECT PIPING

| FOREST GROVE OREGON | D.I.P WATERLINE BEDDING AND BACKFILL DETAILS | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 404 |
|---|---|---|---|
| | | | SCALE NONE |
| | 1w2k\eng\Eng Dept\STANDARD DETAILS\WATER\DIP BEDDING AND BACKFILL.dwg | | LAST REV. 7/18/22 |



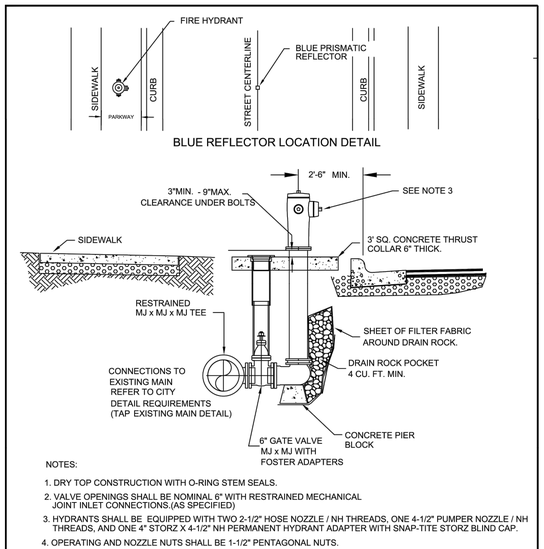

| SIZE | UTILITY VAULT WITH FDC * | UTILITY VAULT W/0 FDC * | BILCO DOOR * |
|---|---|---|---|
| 3 | 577-WA | 577-WA | J-5AL |
| 4 | 577-WA | 577-WA | J-5AL |
| 6 | 676-WA | 676-WA | J-5AL |
| 8 | 687-WA | 687-WA | JD-3AL |
| 10 | 5106-LA | 5106-LA | JD-3AL |

* "OR EQUAL" APPROVED BY CITY ENGINEER

NOTES:

1. CONTRACTOR TO SEAL ALL OPENINGS IN VAULT WITH NON SHRINK GROUT
2. CLEARANCE BETWEEN WALL AND DEVICE 12"x1" MIN., EXCEPT 6"x1" FOR 660-WA VAULT
3. THRUST BLOCK 1'-0" MIN THICKNESS
4. DETECTOR METER TO READ IN CUBIC FEET
5. SET VAULT TOP FLUSH WITH GRADE AROUND EXISTING PEDESTRIAN AREAS (I.E. CURB, SIDEWALK, ETC)
6. PLATE STRAINER REQUIRED AND TO BE INSTALLED PER METER MANUFACTURERS SPECIFICATIONS.
7. CITY STANDARD PIPE: DUCTILE IRON OR TYPE "K" SOFT COPPER TUBING. JOINTS SHALL BE FULL MECHANICALLY RESTRAINED.

| FOREST GROVE OREGON | DOUBLE CHECK DETECTOR ASSEMBLY | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 405 |
|---|---|---|---|
| | | | SCALE NONE |
| | 1w2k\eng\Eng Dept\STANDARD DETAILS\WATER\DOUBLE CHECK DETECTOR ASSEMBLY.dwg | | LAST REV. 7/18/22 |




NOTES:

1. DRY TOP CONSTRUCTION WITH O-RING STEM SEALS.
2. VALVE OPENINGS SHALL BE NOMINAL 6" WITH RESTRAINED MECHANICAL JOINT INLET CONNECTIONS.(AS SPECIFIED)
3. HYDRANTS SHALL BE EQUIPPED WITH TWO 2-1/2" HOSE NOZZLE / NH THREADS, ONE 4-1/2" PUMPER NOZZLE / NH THREADS, AND ONE 4" STORZ X 4-1/2" NH PERMANENT HYDRANT ADAPTER WITH SNAP-TITE STORZ BLIND CAP.
4. OPERATING AND NOZZLE NUTS SHALL BE 1-1/2" PENTAGONAL NUTS.
5. THE MAIN VALVE SHALL OPEN WHEN TURNED COUNTERCLOCKWISE.
6. HYDRANTS SHALL BE OF THE BREAK-FLANGE OR SAFETY TOP TYPE AND CONFORM TO THE LATEST REVISION OF A.W.W.A. C502.
7. DEPTH OF BURY SHALL BE A MINIMUM OF 3 FEET.
8. COLOR: ACE HARDWARE OIL BASE "SAFETY RED". (APPLY 2 COATS AFTER INSTALLATION)
9. MUELLAR SUPER CENTURIAN 250 A-423, KENNEDY GUARDIAN K81D, M & H STYLE 929,CLOW MEDALLION.
10. 5 FOOT RADIUS OF CLEARANCE AROUND HYDRANT.
11. A BLUE PRISMATIC REFLECTOR (VIEWABLE FROM BOTH DIRECTIONS) PERPENDICULAR TO FIRE HYDRANT ON STREET CENTERLINE IS REQUIRED AT EVERY FIRE HYDRANT INSTALLATION.

| FOREST GROVE OREGON | FIRE HYDRANT INSTALLATION WITH WATER MAIN IN PARKWAY | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 406 |
|---|---|---|---|
| | | | SCALE NONE |
| | 1w2k\eng\Eng Dept\STANDARD DETAILS\400s WATERFIRE HYDRANT INSTALL W WATER MAIN IN PARKWAY.DWG | | LAST REV. 9/21/23 |

| | DESCRIPTION | DATE | BY |
|---|---|---|---|
| NO. | REVISIONS | | |
| 1 | | | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

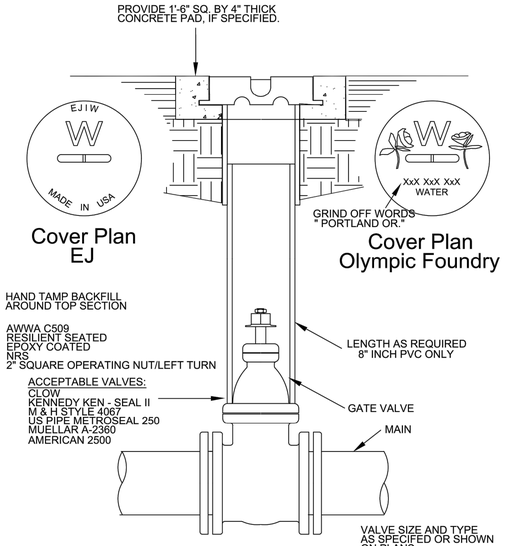

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# DETAILS (FOREST GROVE)

DRAWING
C6.1

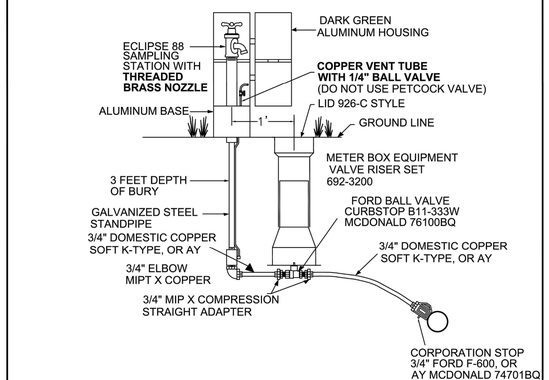
JOB NUMBER
3547.0000.0

3/10/2025 3:37:04 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Notes and Details.dwg, (C6.1 tab)




NOTES:
1. ORDER MJ GATE VALVES WITHOUT ACCESSORIES
2. PORTLAND WATER BUREAU STANDARD VALVE BOX AND COVER AS MANUFACTURED BY OLYMPIC FOUNDRY:
   - 8" CAST IRON VALVE BOX BODY/PORTLAND STYLE PART#15-13-5605
   - 8" CAST IRON VALVE BOX LID /PORTLAND STYLE PART#15-13-5607
   - GRIND OFF WORDS "PORTLAND OR. " LEAVE WORD "WATER".
   - BITUMINOUS COATING ON VALVE BODY + LID.
3. or EJ 8-INCH MODEL 00366310-TOP SECTION AND 00366329-COVER

| FOREST GROVE OREGON | GATE VALVE & BOX SETTING DETAIL | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 408 |
|---|---|---|---|
| | 1w2k\engl\Eng Dept\STANDARD DETAILS\400s WATERGATE VALVE BOX.DWG | | SCALE NONE |
| | | | LAST REV. 9/21/23 |




SAMPLING STATIONS SHALL BE 3' BURY, WITH A 3/4" FIP INLET, AND A 3/4" THREADED BRASS HOSE NOZZLE.

ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NONREMOVABLE, ALUMINUM-CAST HOUSING.

WHEN OPENED, THE STATION SHALL REQUIRE NO KEY FOR OPERATION, AND THE WATER WILL FLOW IN AN ALL BRASS WATERWAY.

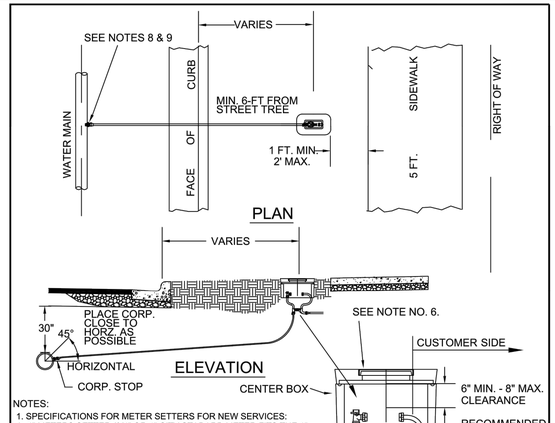
ALL WORKING PARTS WILL ALSO BE OF BRASS AND BE REMOVABLE FROM ABOVE GROUND WITH NO DIGGING. EXTERIOR PIPING SHALL BE GALVANIZED STEEL (BRASS PIPE ALSO AVAILABLE).

A COPPER VENT TUBE WILL ENABLE EACH STATION TO BE PUMPED FREE OF STANDING WATER TO PREVENT FREEZING AND TO MINIMIZE BACTERIA GROWTH.

ECLIPSE NO. 88 SAMPLING STATION SHALL BE MANUFACTURED BY KUPFERLE FOUNDRY, ST. LOUIS, MO 63102.

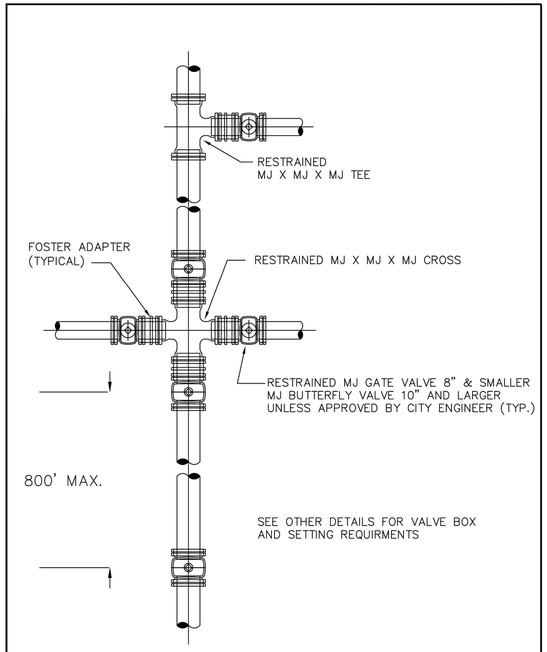
PAINT SHALL BE DARK GREEN AS PROVIDED BY KUPFERLE FOUNDRY OR EQUAL.

| FOREST GROVE OREGON | WATER SAMPLING STATION ECLIPSE NO. 88 SAMPLING STATION | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 409 |
|---|---|---|---|
| | 1w2k\engl\Eng Dept\STANDARD DETAILS\400s WATERSAMPLE STATION.dwg | | SCALE NONE |
| | | | LAST REV. 9/21/23 |




NOTES:
1. SPECIFICATIONS FOR METER SETTERS FOR NEW SERVICES:
   A. 1" METERS SETTER (3/4" OR 1" CITY STADARD METER FITS THE 1" METER SETTER): FORD VB-74-84W-41-44-G(10" HIGH), MUELLER 39(B)24278-R/1H14222(12" HIGH), OR AY MCDONALD 739-410WXQQ 44
   B. 1-1/2" METER SETTER: FORD VBH76-86-18B-11-66, MUELLER 1 1/2" COPPERSETTER 09(B)2429-2, OR AY MCDONALD METER SETTER 739B612WDQQ 665
   C. 2" METER SETTER: FORD VBH77-87-18B-11-77 MUELLER 2" COPPERSETTER 10(B)2429-2, OR AY MCDONALD METER SETTER 739B718WDQQ 775
2. LOCKING WING NUT, BALL TYPE ANGLE STOP, INLET CTS/PE COMPRESSION OUTLET DUAL PURPOSE NUT.
3. OTHER BRANDS ARE ACCEPTABLE IF THEY MEET THE ABOVE SPECIFICATIONS.
4. SPECIFICATIONS FOR WATER SERVICE TUBING.
   A. COPPER TUBING: ASST. B88, TYPE K SOFT 60'COILS / 40'COILS.
5. INSTALL TUBING WITH 6" SAND (ENCASEMENT ENTIRE OUTSIDE OF TUBING).
6. INSTALL ARMORCAST BRAND WITH MOUSE HOLES. POLYMER CONCRETE P6000485 12" x 20" x 12" ROTOCAST BOX WITH A6000484RCI 12' X 20" X 1 3/4" RPM COVER W/CAST IRON READ LID OR POLYMER CONCRETE P6001534X18 17"X30" X 18" ROTOCAST BOX WITH A6001643RCI 17" X 30" X 2" RPM COVER WITH CAST IRON READ LID.
7. WATER SERVICE SHALL HAVE MINIMUM 6 FEET CLEARANCE FROM STREET TREES.
8. WET TAPPING OF EXISTING PUBLIC WATER MAIN SHALL BE BY A & A DRILLING SERVICES OR CITY APPROVED EQUAL.
9. CONNECTION TO EXISTING PUBLIC WATER MAINS SHALL BE AS FOLLOWS:
   A. WET TAPS FOR1" WATER SERVICES SHALL USE 1" CORP STOPS WITH CC THREADS.
   B. WET TAPS FOR 1 1/2" AND 2" WATER SERVICES SHALL USE DOUBLE STRAP SERVICE SADDLES. DOUBLE STRAP SERVICE SADDLES SHALL BE BY ROMAC INDUSTRIES INC. MODEL NUMBER 202S WITH 2" FIP OUTLET OR FORD IRON SERVICE SADDLES WITH 2" FIP OUTLET.
   C. 1 1/2" OR 2" WATER SERVICES SHALL INCLUDE A 1 1/2" OR 2" BALL CORP STOP WITH MIPTXCTS THREADS, RESPECTIVELY.
   D. WET TAPS LARGER THAN 2" SHALL BE PER CITY'S WET TAP STANDARD DETAIL.

| FOREST GROVE OREGON | WATER SERVICE TYPICAL INSTALLATION | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 410 |
|---|---|---|---|
| | 1w2k\engl\Eng Dept\STANDARD DETAILS\400s WATERWATER SERVICE TYPICAL INSTALLATION.dwg | | SCALE NONE |
| | | | LAST REV. 9/21/23 |




| FOREST GROVE OREGON | TYPICAL GATE VALVE LOCATION | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 412 |
|---|---|---|---|
| | 1w2k\engl\Eng Dept\STANDARD DETAILS\400s WATER\Typical Gate Valve Location.dwg | | SCALE NONE |
| | | | LAST REV. 9/21/23 |

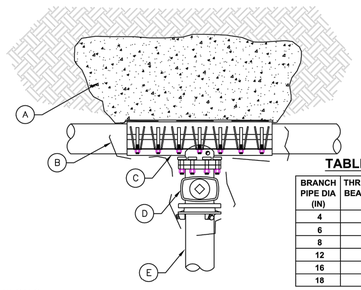



**TABLE 1**

| BRANCH PIPE DIA (IN) | THRUST BLOCK BEARING AREA (SF) |
|---|---|
| 4 | 1.3 |
| 6 | 2.8 |
| 8 | 5.0 |
| 12 | 11.3 |
| 16 | 20.1 |
| 18 | 26.0 |

KEYNOTES:
- A. CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH. THRUST BLOCK SIZE SHALL BE PER TABLE 1 AND SHALL NOT BE LESS THAN ONE FOOT IN ANY DIMENSION. CONCRETE SHALL BE CLASS 3500 (6.5 SACK MIN.)
- B. WRAP TAPPING SADDLE AND VALVE WITH 3 LAYERS OF 3 MIL PVC PRIOR TO POURING THRUST BLOCK AND BACKFILLING. EXTEND PVC 6" MINIMUM BEYOND SADDLE AND VALVE AND SECURE TO PIPE WITH DUCT TAPE.
- C. STAINLESS STEEL TAPPING SADDLE WITH GASKET AND FLANGED CONNECTION.
- D. LINE-SIZE GATE VALVE (FLG X MJ) PER CITY OF FOREST GROVE DETAIL AND SPECIFICATION.
- E. CITY STANDARD PIPE: DUCTILE IRON OR TYPE "K" SOFT COPPER TUBING. JOINTS ON BRANCH PIPE SHALL BE FULLY MECHANICALLY RESTRAINED.

GENERAL NOTES:
1. BEFORE INSTALLING TAPPING SADDLE, CONTRACTOR SHALL THOROUGHLY CLEAN PIPE TO REMOVE ALL DIRT, ROCKS, AND OTHER FOREIGN MATERIAL FROM PIPE WHERE SADDLE WILL BE INSTALLED.
2. SADDLE BOLTS SHALL BE TORQUED TO MANUFACTURER'S SPECIFICATIONS.
3. CONTRACTOR SHALL ENSURE THAT GASKET IS PROPERLY ALIGNED AND FREE OF FOREIGN MATERIAL PRIOR TO TIGHTENING SADDLE.
4. SADDLE LOCATION AND INSTALLATION SHALL BE APPROVED BY THE CITY OF FOREST GROVE ENGINEERING DEPARTMENT.
5. CONTRACTOR SHALL AIR TEST SADDLE TO 40 PSI PRIOR TO TAPPING
6. CONTRACTOR SHALL FLUSH AND PRESSURE TEST VALVE FOR PRIOR TO BACKFILLING.
7. APPROVED TAPPING SLEEVES FOR USE IN CITY OF FOREST GROVE JURISDICTION: JCM 432 SS, ROMAC SST WITH STAINLESS STEEL FLANGE, OR CITY OF FOREST GROVE APPROVAL EQUAL.
8. PROPOSED CONNECTION AND TYPE OF CONNECTION TO CITY WATER SYSTEM NEEDS TO BE GIVEN APPROVAL BY THE CITY PRIOR TO ACTUAL CONNECTION WORK. CITY NEEDS TO BE GIVEN ADVANCED NOTIFICATION (at least 24 hours) PRIOR TO CONNECTION, NEEDING TO ISOLATE, OR TAPPING, THE FOREST GROVE WATER SYSTEM. NOTIFICATION SHALL BE TO WATER DEPARTMENT, Lonny Schmidt AT 503.702.5949 OR 503.992.3258 AND ENGINEERING AT 503.992.3228. ALL WET TAPS SHALL BE INSTALLED BY A CONTRACTOR APPROVED BY THE CITY OF FOREST GROVE AND UNDER THE DIRECTION OF A WATER DEPARTMENT REPRESENTATIVE. SEE CITY STANDARD DETAIL FOR WET TAP. CONTACT THE WATER DEPARTMENT FOR A LIST OF APPROVED TAPPING CONTRACTORS.

| FOREST GROVE OREGON | WET TAP | ENGINEERING DEPARTMENT 1924 COUNCIL STREET P.O. BOX 326 FOREST GROVE, OR 97116 | DRAWING NO. 414 |
|---|---|---|---|
| | 1w2k\engl\Eng Dept\STANDARD DETAILS\400s WATERWET TAP.dwg | | SCALE NONE |
| | | | LAST REV. 9/21/23 |

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |
| 1 | | | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER OREGON NOV. 12, 2008 WILLIAM J. WELLS
REVIEW
RENEWS: 6/30/2026

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

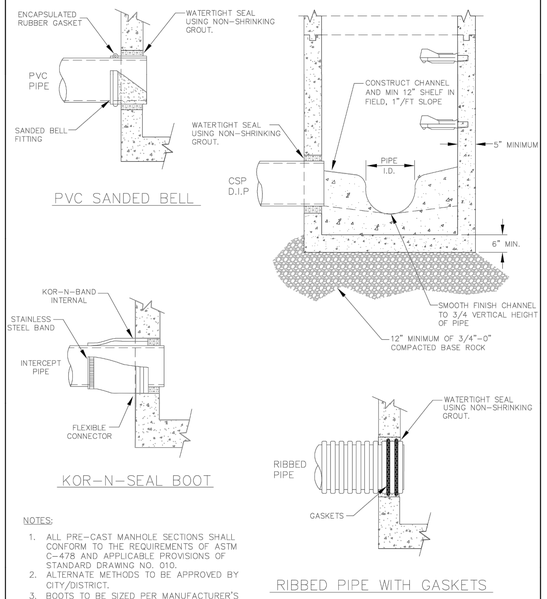
STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

DETAILS (FOREST GROVE)

DRAWING
C6.2

JOB NUMBER
3547.0000.0

3/10/2025 3:37:06 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Notes and Details.dwg, (C6.2 tab)



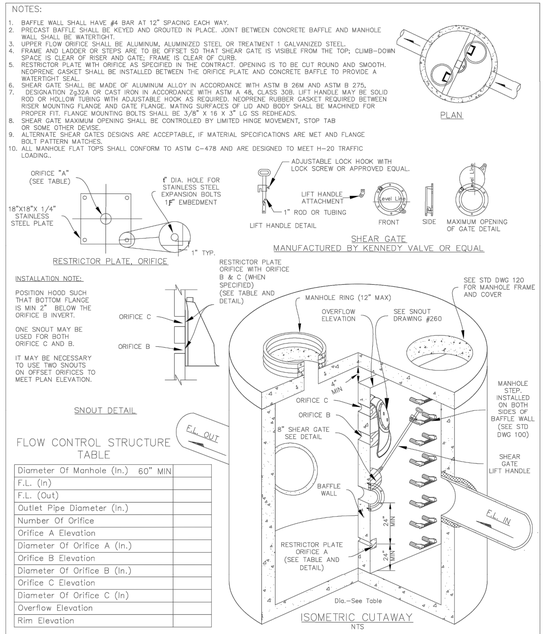

NOTES:

1. ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD DRAWING NO. 010.
2. ALTERNATE METHODS TO BE APPROVED BY CITY/DISTRICT.
3. BOOTS TO BE SIZED PER MANUFACTURER'S RECOMMENDATIONS/SPECIFICATIONS.

# MANHOLE CONNECTIONS

DRAWING NO. 030 — REVISED 10-31-19

CleanWater Services



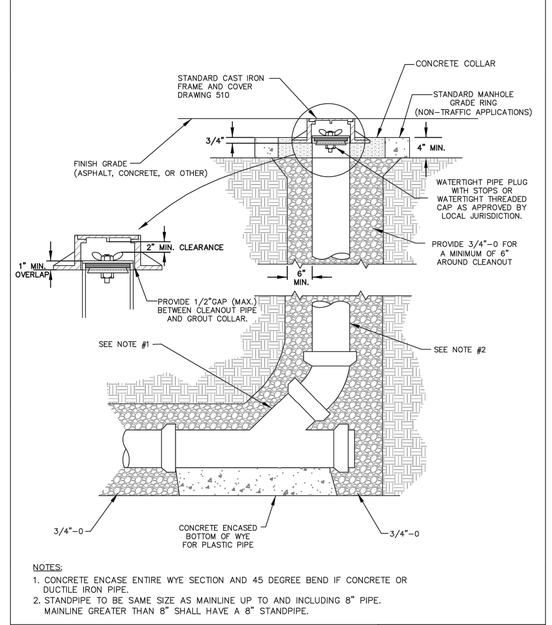

## FLOW CONTROL STRUCTURE TABLE

| | |
|---|---|
| Diameter Of Manhole (In.) 60" MIN | |
| F.L. (In) | |
| F.L. (Out) | |
| Outlet Pipe Diameter (In.) | |
| Number Of Orifice | |
| Orifice A Elevation | |
| Diameter Of Orifice A (In.) | |
| Orifice B Elevation | |
| Diameter Of Orifice B (In.) | |
| Orifice C Elevation | |
| Diameter Of Orifice C (In) | |
| Overflow Elevation | |
| Rim Elevation | |

# FLOW CONTROL STRUCTURE DETAIL

DRAWING NO. 270 — REVISED 10-31-19

CleanWater Services



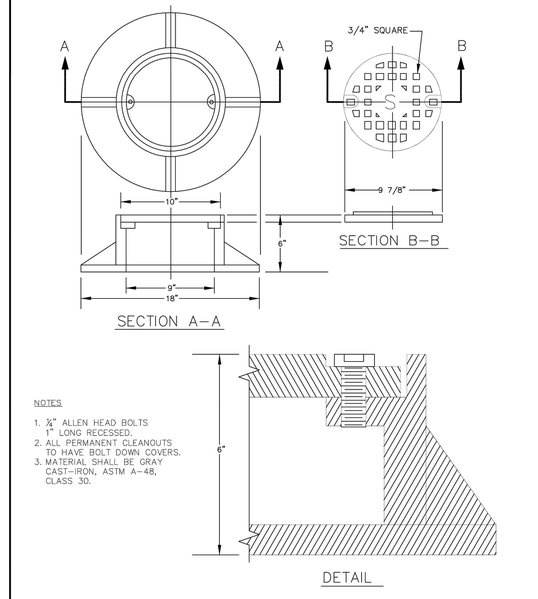

NOTES:

1. CONCRETE ENCASE ENTIRE WYE SECTION AND 45 DEGREE BEND IF CONCRETE OR DUCTILE IRON PIPE.
2. STANDPIPE TO BE SAME SIZE AS MAINLINE UP TO AND INCLUDING 8" PIPE. MAINLINE GREATER THAN 8" SHALL HAVE A 8" STANDPIPE.

# STANDARD CLEANOUT

DRAWING NO. 500 — REVISED 10-31-19

CleanWater Services



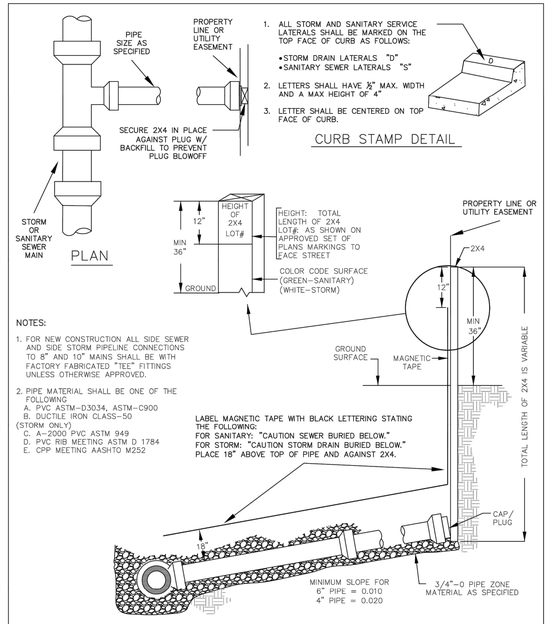

NOTES

1. 1/4" ALLEN HEAD BOLTS 1" LONG RECESSED.
2. ALL PERMANENT CLEANOUTS TO HAVE BOLT DOWN COVERS.
3. MATERIAL SHALL BE GRAY CAST-IRON, ASTM A-48, CLASS 30.

# CLEANOUT FRAME AND COVER

DRAWING NO. 510 — REVISED 10-31-19

CleanWater Services




1. ALL STORM AND SANITARY SERVICE LATERALS SHALL BE MARKED ON THE TOP FACE OF CURB AS FOLLOWS:
   - STORM DRAIN LATERALS "D"
   - SANITARY SEWER LATERALS "S"
2. LETTERS SHALL HAVE 3/4" MAX. WIDTH AND A MAX HEIGHT OF 4"
3. LETTER SHALL BE CENTERED ON TOP FACE OF CURB.

CURB STAMP DETAIL

NOTES:

1. FOR NEW CONSTRUCTION ALL SIDE SEWER AND SIDE STORM PIPELINE CONNECTIONS TO 8" AND 10" MAINS SHALL BE WITH FACTORY FABRICATED "TEE" FITTINGS UNLESS OTHERWISE APPROVED.
2. PIPE MATERIAL SHALL BE ONE OF THE FOLLOWING
   A. PVC ASTM-D3034, ASTM-C900
   B. DUCTILE IRON CLASS-50

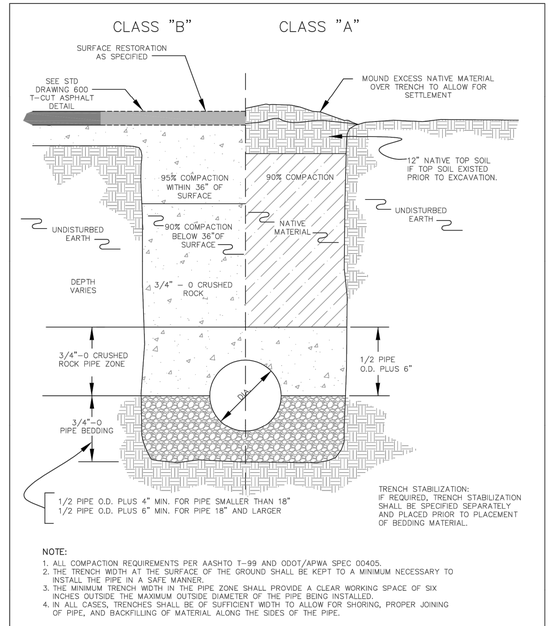
(STORM ONLY)

   C. A-2000 PVC ASTM 949
   D. PVC RIB MEETING ASTM D 1784
   E. CPP MEETING AASHTO M252

# SIDE SEWER / SIDE STORM PIPELINE

DRAWING NO. 520 — REVISED 10-31-19

CleanWater Services



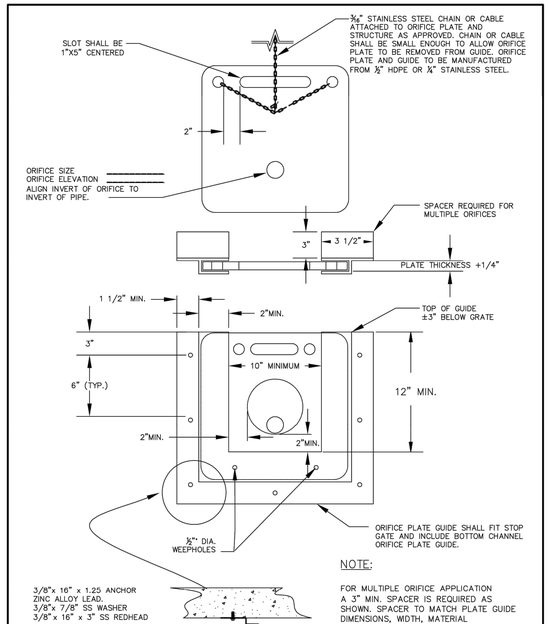

NOTE:

1. ALL COMPACTION REQUIREMENTS PER AASHTO T-99 AND ODOT/APWA SPEC 00405.
2. THE TRENCH WIDTH AT THE SURFACE OF THE GROUND SHALL BE KEPT TO A MINIMUM NECESSARY TO INSTALL THE PIPE IN A SAFE MANNER.
3. THE MINIMUM TRENCH WIDTH IN THE PIPE ZONE SHALL PROVIDE A CLEAR WORKING SPACE OF SIX INCHES OUTSIDE THE MAXIMUM OUTSIDE DIAMETER OF THE PIPE BEING INSTALLED.
4. IN ALL CASES, TRENCHES SHALL BE OF SUFFICIENT WIDTH TO ALLOW FOR SHORING, PROPER JOINING OF PIPE, AND BACKFILLING OF MATERIAL ALONG THE SIDES OF THE PIPE.

# TRENCH BACKFILL DETAILS

DRAWING NO. 590 — REVISED 10-31-19

CleanWater Services




NOTE:

FOR MULTIPLE ORIFICE APPLICATION A 3" MIN. SPACER IS REQUIRED AS SHOWN. SPACER TO MATCH PLATE GUIDE DIMENSIONS, WIDTH, MATERIAL WITH A WATERTIGHT SEAL.

# ORIFICE PLATE AND GUIDE

DRAWING NO. 711 — REVISED 10-31-19

CleanWater Services

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|
| | | | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
REVIEW
RENEWS: 6/30/2026


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

DETAILS (CLEAN WATER SERVICES)

DRAWING
C6.3

JOB NUMBER
3547.0000.0

3/10/2025 3:37:09 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Notes and Details.dwg, (C6.3 tab)

| SITE SPECIFIC DATA | |
|---|---|
| Structure ID | - |
| Treatment Flow Rate (gpm/cfs) | - |
| Peak Flow Rate (cfs) | - |
| Cartridge Quantity | - |
| Rim Elevation | - |

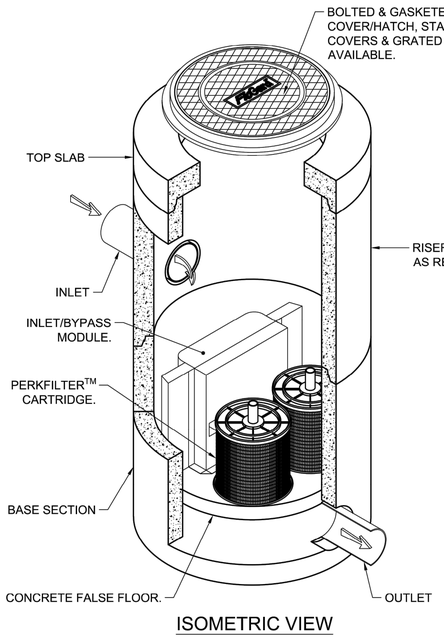
| Pipe Data | Pipe Location | Pipe Size | Pipe Type | Invert Elevation |
|---|---|---|---|---|
| Inlet | - | - | - | - |
| Outlet | - | - | - | - |

Notes:
-

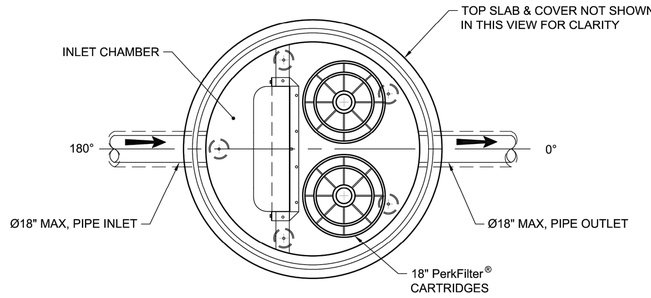
| MINIMUM DEPTH | |
|---|---|
| Outlet Pipe Size | Minimum Rim to Outlet Depth |
| Ø6" | 4.42' |
| Ø8" | 4.67' |
| Ø10" | 4.92' |
| Ø12" | 5.17' |
| Ø15" | 5.42' |
| Ø18" | 5.67' |

| PERFORMANCE SPECIFICATIONS | |
|---|---|
| Peak Treatment Capacities: [1] | |
| Max. Cartridge Quantity | 2 |
| NJDEP 80% Removal, 75 micron | 40.8 gpm / 0.091 cfs |
| WA Ecology GULD - Basic & Phosphorus | 20.4 gpm / 0.045 cfs |
| Max. Bypass Capacity | 3.05 cfs |

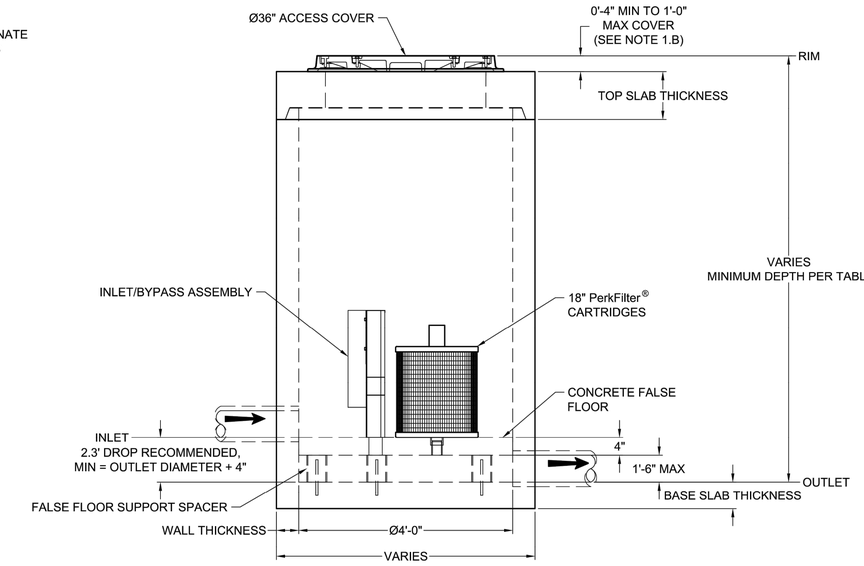
1. Contact Oldcastle for alternative treatment and peak flow capacities.




ISOMETRIC VIEW




PLAN VIEW




ELEVATION VIEW

NOTES:

1. DESIGN LOADINGS:
   A. AASHTO HS-20-44 (WITH IMPACT)
   B. DESIGN SOIL COVER: 1'-0" MAXIMUM
   C. ASSUMED WATER TABLE: BELOW INVERT.
   D. LATERAL EARTH PRESSURE: 45 PCF (DRAINED)
   E. LATERAL LIVE LOAD SURCHARGE: 80 PSF (APPLIED TO 8'-0" BELOW GRADE)
   F. NO LATERAL SURCHARGE FROM ADJACENT BUILDINGS, WALLS, PIERS, OR FOUNDATIONS.
2. CONCRETE 28-DAY MINIMUM COMPRESSIVE STRENGTH: 5,000 PSI MINIMUM.
3. REINFORCING: REBAR, ASTM A615/A706, GRADE 60
4. CEMENT: ASTM C150
5. REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2,500 PSF
6. REFERENCE STANDARD:
   A. ASTM C 478
   B. ASTM C 497
7. THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HEREIN. ENGINEER-OF-RECORD SHALL VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVIEWING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW OF THIS SUBMITTAL.
8. OVERSIZED HOLES TO ACCOMMODATE SPECIFIC PIPE TYPE MUST BE CONCENTRIC TO PIPE ID. AFTER PIPES ARE INSTALLED, ALL ANNULAR SPACES SHALL BE FILLED WITH A MINIMUM OF 3,000 PSI CONCRETE FOR FULL THICKNESS OF PRECAST WALLS. PIPES ARE TO BE FLUSH WITH THE INSIDE SURFACE OF THE CONCRETE STRUCTURE.
9. CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
10. CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
11. SECTION HEIGHTS, SLAB/WALL THICKNESSES, AND KEYWAYS ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
12. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT OLDCASTLE INFRASTRUCTURE.
13. MAXIMUM PICK WEIGHTS:
   A. TOP SLAB: XX,XXX LBS
   B. RISER: XX,XXX LBS
   C. BASE: XX,XXX LBS*
   (* COMBINED WEIGHT OF BASE INCLUDES FALSE FLOOR, AND PRODUCT INTERNALS.)
14. INTERNALS SHALL CONSIST OF CARTRIDGES, INLET/BYPASS ASSEMBLIES, FALSE FLOOR AND FALSE FLOOR SUPPORT SPACERS.

Oldcastle Infrastructure™
A CRH COMPANY

Ph: 800.579.8819 | www.oldcastleinfrastructure.com/stormwater

THIS DOCUMENT IS THE PROPERTY OF OLDCASTLE INFRASTRUCTURE, INC. IT IS CONFIDENTIAL, SUBMITTED FOR REFERENCE PURPOSES ONLY AND SHALL NOT BE USED IN ANY WAY INJURIOUS TO THE INTERESTS OF, OR WITHOUT THE WRITTEN PERMISSION OF OLDCASTLE INFRASTRUCTURE, INC. COPYRIGHT © 2023 OLDCASTLE INFRASTRUCTURE, INC. ALL RIGHTS RESERVED.

PerkFilter® Manhole (STANDARD)

Ø48" with 18" Cartridges

CUSTOMER
-

PROJECT NAME
-

| SHEET NAME | REVISION | SHEET |
|---|---|---|
| Specifier Drawing PFMH-48-18 | - | 1 OF 1 |
| | REV DATE - | |

Media Filtration

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |
| 1 | | | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

DETAILS (OLDCASTLE)

DRAWING
C6.4

JOB NUMBER
3547.0000.0

3/10/2025 3:37:12 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Notes and Details.dwg, (C6.4 tab)

REDMOND GEOTECHNICAL SERVICES

# Geotechnical Investigation and Consultation Services

# Proposed Forest Grove Multi-Family Development Project

# Tax Lot No's. 5601 and 5602

# 1930 23rd Avenue

# Forest Grove (Washington County), Oregon

# for

# 7 Star Convenience Store

**Project No. 1552.006.G**
**March 11, 2025**

REDMOND GEOTECHNICAL SERVICES

March 11, 2025

Mr. Sunny Singh
7 Star Convenience Store
2248 Main Street
Forest Grove, Oregon 97116

Dear Mr. Singh:

**Re: Geotechnical Investigation and Consultation Services,**
**Proposed Forest Grove Multi-Family Residential Development Project,**
**Tax Lot No's. 5601 & 5602, 1930 23rd Avenue, Forest Grove (Washington County), Oregon**

Submitted herewith is our report entitled "Geotechnical Investigation and Consultation Services, Proposed Forest Grove Multi-Family Residential Development Project, Tax Lot No's. 5601 & 5602, 1930 23rd Avenue, Forest Grove (Washington County), Oregon". The scope of our services was outlined in our formal proposal to Mr. Gene Bolante of Studio 3 Architecture dated November 29, 2024. Written authorization of our services was provided on November 30, 2024.

During the course of our investigation, we have kept you and/or others advised of our schedule and preliminary findings. We appreciate the opportunity to assist you with this phase of the project. Should you have any questions regarding this report, please do not hesitate to call.

Sincerely,

Daniel M. Redmond, P.E., G.E.
President/Principal Engineer




Cc: Mr. Gene Bolante
Studio 3 Architecture

PO BOX 20547 • PORTLAND, OREGON 97294 • FAX 503/286-7176 • PHONE 503/285-0598

# TABLE OF CONTENTS


| | Page No. |
|---|---|
| INTRODUCTION | 1 |
| PROJECT DESCRIPTION | 1 |
| SCOPE OF WORK | 2 |
| SITE CONDITIONS | 3 |
| Site Geology | 3 |
| Surface Conditions | 3 |
| Subsurface Soil Conditions | 3 |
| Groundwater | 4 |
| INFILTRATION TESTING | 4 |
| LABORATORY TESTING | 5 |
| SEISMICITY AND EARTHQUAKE SOURCES | 5 |
| Liquefaction | 6 |
| Landslides | 6 |
| Surface Rupture | 6 |
| Tsunami and Seiche | 7 |
| Flooding and Erosion | 7 |
| CONCLUSIONS AND RECOMMENDATIONS | 7 |
| General | 7 |
| Site Preparation | 8 |
| Foundation Support | 9 |
| Shallow Foundations | 9 |
| Floor Slab Support | 10 |

**Table of Contents** (continued)


Retaining/Below Grade Walls 10

Pavements 11

Access Drives and Parking 11

Pavement Subgrade, Base Course & Asphalt Materials 12

Wet Weather Grading and Soft Spot Mitigation 12

Shrink-Swell and Frost Heave 13

Excavations/Slopes 13

Surface Drainage/Groundwater 13

Design Infiltration Rates 14

Seismic Design Considerations 14

CONSTRUCTION MONITORING AND TESTING 15

CLOSURE AND LIMITATIONS 15

LEVEL OF CARE 16

REFERENCES 17

FIGURES

Figure No. 1 - Site Vicinity Map
Figure No. 2 - Site Exploration Plan
Figure No. 3 – Typical Perimeter Footing/Retaining Wall Drain Detail

APPENDIX

Appendix A - Test Pit Logs and Laboratory Test Results

# GEOTECHNICAL INVESTIGATION AND CONSULTATION SERVICES
# PROPOSED FOREST GROVE
# MULTI-FAMILY RESIDENTIAL DEVELOPMENT PROJECT
# TAX LOT NO'S. 5601 & 5602, 1930 23ND AVENUE
# FOREST GROVE (WASHINGTON COUNTY), OREGON

## INTRODUCTION

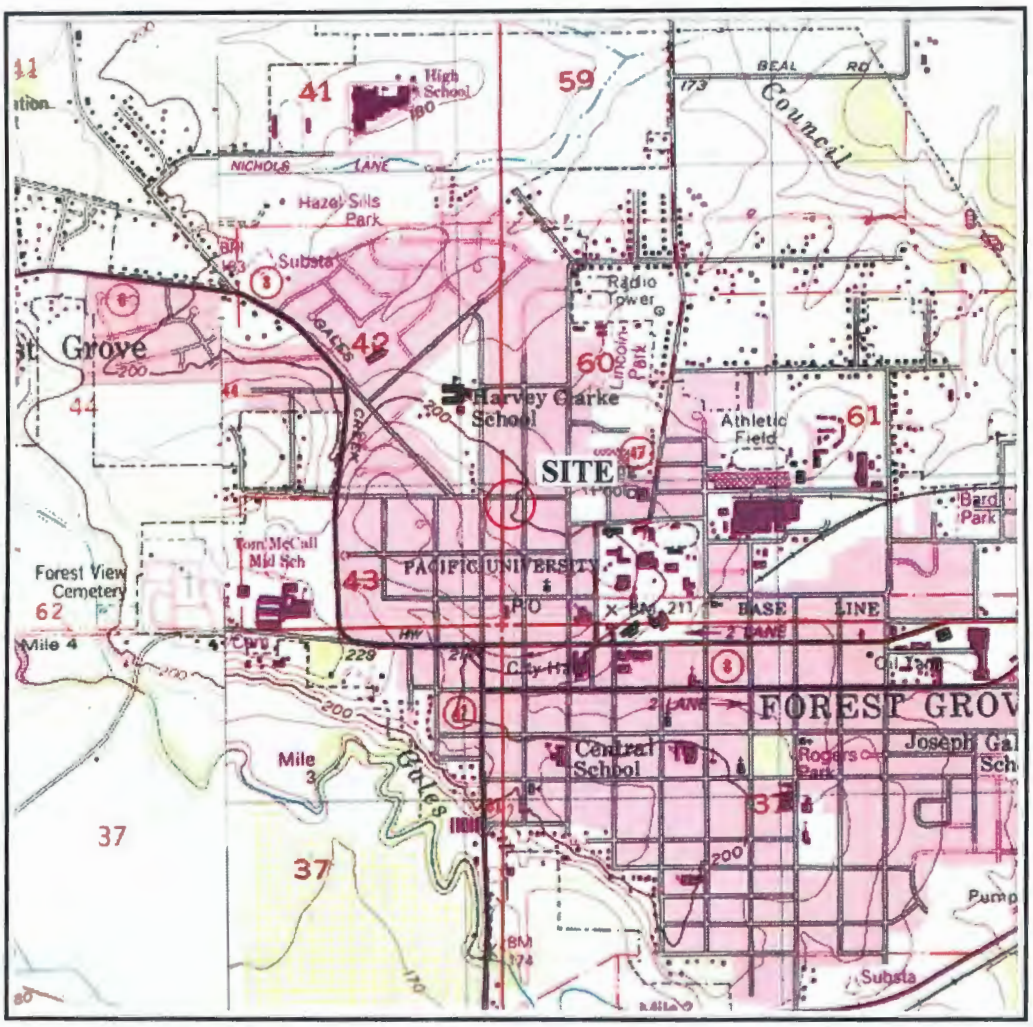
Redmond Geotechnical Services, LLC is please to submit to you the results of our Geotechnical Investigation at the site of the proposed Forest Grove multi-family residential development project which is located to the south of 23rd Avenue and west of Main Street in Forest Grove (Washington County), Oregon. The general location of the subject site is shown on the Site Vicinity Map, Figure No. 1. The purpose of our geotechnical investigation services at this time was to explore the existing subsurface soils and/or groundwater conditions across the subject site and to develop and/or provide appropriate geotechnical design and construction recommendations for the proposed new Forest Grove multi-family residential development project.

## PROJECT DESCRIPTION

Based on a review of the proposed site development plan(s), we understand that present plans for the project are to construct two (2) new multi-family (apartment) buildings at the site. Reportedly, the new apartment buildings will be two- and/or three-story wood-frame structures which will have a base and/or ground floor footprint of approximately, 2,500 to 3,000 square feet. Support of the new apartment buildings is anticipated to consist primarily of conventional shallow strip (continuous) footings although some individual (spread) column-type footings are also possible. Additionally, we understand that the new apartment buildings will also include concrete slab-on-grade floors. Structural loading information available at this time indicates the structure loads to be fairly typical for this type of single-story wood-frame structure and is expected to result in maximum dead plus live continuous (strip) and individual (column) footing loads on the order of about 3.0 to 5.0 kips per lineal foot (klf) and 15 to 50 kips, respectively.

Other associated improvements will include new asphaltic concrete pavements for automobile drive and parking areas. Additionally, we envision that stormwater from hard and/or impervious surfaces (i.e., roofs and pavements) will be collected for on-site treatment and possible disposal.

Earthwork and grading operations associated with bringing the subject property to finish design grades are unknown at this time but are anticipated to result in cuts on the order of approximately one (1) to two (2) feet.




**FOREST GROVE QUADRANGLE**
**OREGON - WASHINGTON COUNTY**
**7.5-MINUTE SERIES**

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

## SITE VICINITY MAP

| | | |
|---|---|---|
| Project No. 1552.006.G | **FOREST GROVE APARTMENTS TL'S 5601 & 5602, 1930 23RD AVENUE** | Figure No. 1 |

## SCOPE OF WORK

The purpose of our geotechnical studies was to evaluate the overall site subsurface soil and/or groundwater conditions underlying the site with regard to the proposed new Forest Grove multi-family residential construction at the site and any associated impacts or concerns with respect to the multi-family residential development as well as provide appropriate geotechnical design and construction recommendations for the project.

Specifically, our geotechnical investigation included the following scope of work items:

1. A detailed field reconnaissance and subsurface exploration program of the soil and ground water conditions underlying the site by means of six (6) exploratory test holes. The exploratory test holes were excavated to depths ranging from about five (5) to eight (8) feet beneath existing site grades at the approximate locations as shown on the Site Exploration Map, Figure No. 2.

2. Laboratory testing to evaluate and identify pertinent physical and engineering properties of the subsurface soils encountered relative to the planned site development and construction at the site. The laboratory testing program included tests to help evaluate the natural (field) moisture content and dry density, Atterberg Limits and gradational characteristics as well as consolidation and "R"-value testing.

3. A literature review and engineering evaluation and assessment of the regional seismicity to evaluate the potential ground motion hazard(s) at the subject site. The evaluation and assessment included a review of the regional earthquake history and sources such as potential seismic sources, maximum credible earthquakes, and reoccurrence intervals as well as a discussion of the possible ground response to the selected design earthquake(s), fault rupture, landsliding, liquefaction, and tsunami and seiche flooding.

4. Engineering analyses utilizing the field and laboratory data as a basis for furnishing recommendations for foundation support of the proposed new apartment structures. Recommendations include maximum design allowable contact bearing pressure(s), depth of footing embedment, estimates of foundation settlement, lateral soil resistance, and foundation subgrade preparation. Additionally, construction and/or permanent subsurface water drainage considerations have also been prepared. Further, our report includes recommendations regarding site preparation, placement and compaction of structural fill materials, suitability of the on-site soils for use as structural fill, criteria for import fill materials, and preparation of foundation, pavement and/or floor slab subgrades.

5. Flexible pavement design and construction recommendations for the proposed new private access drives and parking area improvements.

## SITE CONDITIONS

### Site Geology

Available geologic mapping of the area and/or subject site indicates that the near surface soils consist of fine grained alluvial soil deposits (Qff) comprised of crudely to complexly layered, poorly consolidated medium sand to silt deposited by one or more phases of catastrophic floods of the Willamette River. Sediments of unit Qff occur along both sides of the Willamette River basin. The thickness of unit Qff is typically 20 to 30 feet with a maximum thickness of about 40 feet.

### Surface Conditions

The subject proposed new Forest Grove multi-family residential development property is generally L-shape and is roughly bounded to the north by 23rd Avenue, to the east by an existing commercial property and to the south and west by existing and/or developed residential and/or commercial properties.

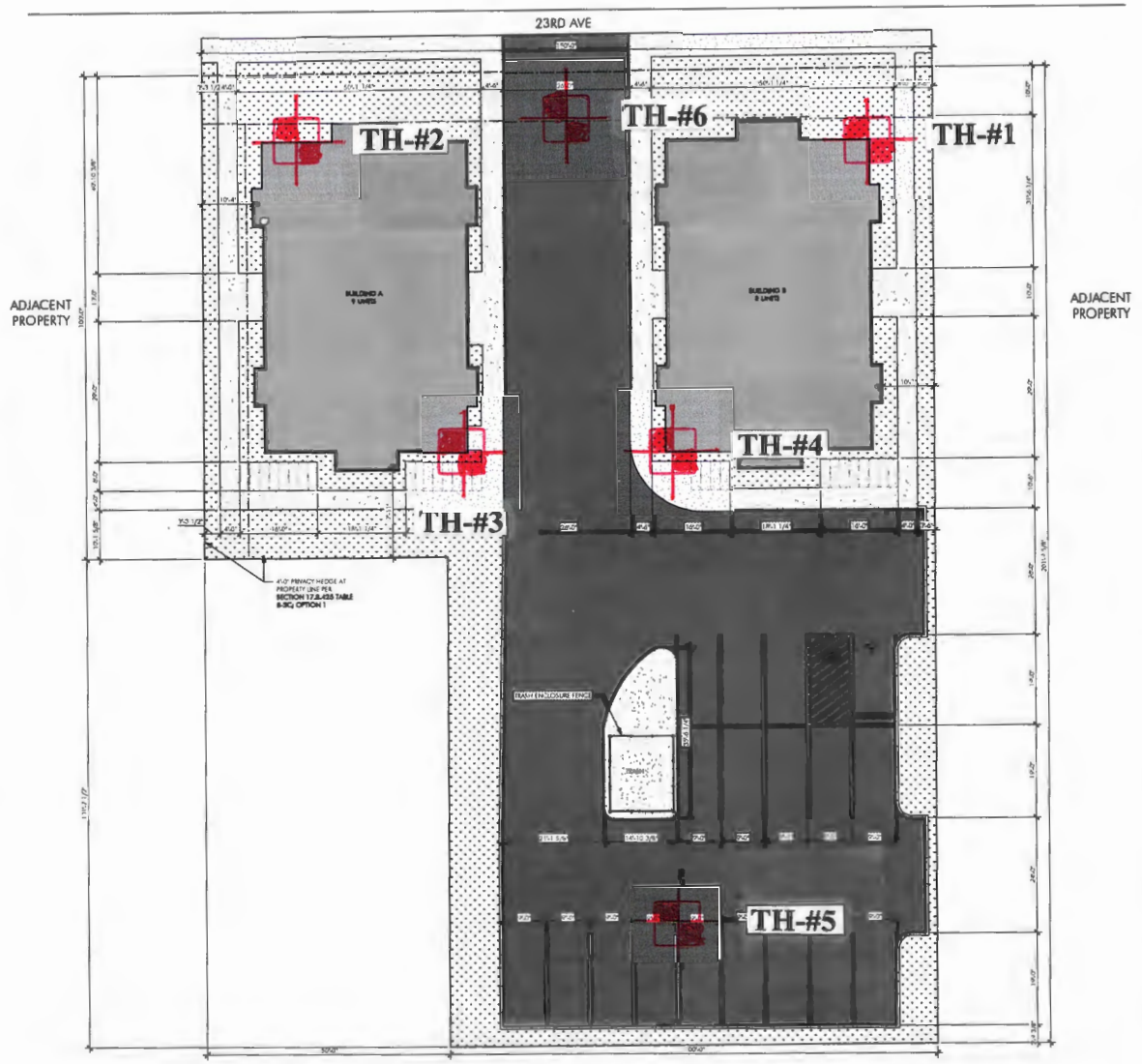
The subject proposed new Forest Grove apartment site is generally improved and contains an existing single-story metal commercial building in the northeasterly portion of the site while the remaining portions of the site consists of an existing gravel parking lot area. Surface vegetation across the proposed new Forest Grove multi-family development site generally consists of a light growth of grass and weeds.

Topographically, the site is characterized as relatively flat-lying to gently sloping terrain (less than 5 percent) descending downward towards the north with overall topographic relief estimated at about one (1) to two (2) feet and is estimated to lie at about Elevation 200 feet.

### Subsurface Soil Conditions

Our understanding of the subsurface soil conditions underlying the site was developed by means of six (6) exploratory test holes excavated to depths ranging from about five (5.0) to eight (8.0) feet beneath existing site grades on December 12, 2024. The location of the exploratory test holes were located in the field by marking off distances from existing and/or known site features and are shown in relation to the existing and/or proposed new site improvements on the Site Exploration Plan, Figure No. 2. Detailed logs of the test hole explorations, presenting conditions encountered at each location explored, are presented in the Appendix, Figure No's. A-5 through A-7.

The exploratory test holes performed during this study were observed by staff from Redmond Geotechnical Services, LLC who logged each of the test holes and obtained representative samples of the subsurface soils encountered across the site. Additionally, the elevation of the exploratory test holes were referenced from a USGS Topographic Map and should be considered as approximate. All subsurface soils encountered at the site and/or within the exploratory test holes were logged and classified in general conformance with the Unified Soil Classification System (USCS) which is outlined on Figure No. A-4.




**LEGEND**

**TH-#6** Indicates approximate location of exploratory test hole

## SITE EXPLORATION PLAN

| | | |
|---|---|---|
| Project No. 1552.006.G | **FOREST GROVE APARTMENTS TL'S 5601 & 5602, 1930 23RD AVENUE** | Figure No. 2 |

The test hole explorations revealed that the subject site is generally underlain by native soil deposits comprised of Lacustrine and Fluvial sedimentary soil deposits of Pleistocene age. However, the site is generally surfaced with aggregate base rock. Specifically, the subsurface soils underlying the project area consists of a surficial layer of fill material comprised of gray-brown, very moist to wet, medium dense, crushed aggregate base rock to a depth of about six (6) inches. The surficial fill material is inturn underlain by native soils composed of an upper layer of medium to dark brown, medium stiff, slightly organic, sandy, clayey silt which extends to a depth of approximately six (6) to eight (8) inches beneath existing surface grades. This upper layer of medium to dark brown soil generally represents the old topsoil zone which was inturn underlain at depth by medium brown, very moist, medium stiff to medium dense, clayey, sandy silt to silty sand subgrade soils to the maximum depth explored of eight (8) feet beneath existing site grades. These clayey, sandy silt to silty sand subgrade soils are best characterized by relatively low to moderate strength and moderate compressibility.

### Groundwater

Groundwater was not encountered within any of the exploratory test hole explorations (TH-#1 through TH-#6) at the time of excavating to depths of at least eight (8) feet beneath existing site grades. Additionally, based on a review of available water wells in the area, the apparent depth to seasonal high groundwater in the area of the subject site is greater than 10 feet. However, groundwater elevations at and/or below the subject site may fluctuate seasonally in accordance with rainfall conditions as well as changes in site utilization. Further, due to the presence of relatively low permeability within the near surface clayey, sandy silt to silty sand subgrade soils, water may tend to perch near to and/or at the ground surface during periods of peak and/or prolonged rainfall.

## INFILTRATION TESTING

We performed one (1) field infiltration test at the site on December 12, 2024. The infiltration test was performed in test hole TH-#5 at a depth of about four (4) feet beneath the existing site and/or surface grades. The subgrade soils encountered in the infiltration test hole consisted of clayey, sandy silt to silty sand. The infiltration testing was performed in general conformance with current EPA and/or Washington County Encased Falling Head test method which consisted of advancing a PVC pipe approximately 6 inches into the exposed soil horizon at each test location. Using a steady water flow, water was discharged into the pipe and allowed to penetrate and saturate the subgrade soils. The water level was adjusted over a two (2) hour period and allowed to achieve a saturated subgrade soil condition consistent with the bottom elevation of the surrounding test pit excavation. Following the required saturating period, water was again added into the PVC pipe and the time and/or rate at which the water level dropped was monitored and recorded. Each measurable drop in the water level was recorded until a consistent infiltration rate was observed and/or repeated.

Based on the results of the field infiltration testing at the site, we have found that the native clayey, sandy silt to silty sand subgrade soil deposits posses an ultimate infiltration rate of about 1.2 inches per hour (in/hr).

## LABORATORY TESTING

Representative samples of the on-site subsurface soils were collected at selected depths and intervals from various test pit explorations and returned to our laboratory for further examination and testing and/or to aid in the classification of the subsurface soils as well as to help evaluate and identify their engineering strength and compressibility characteristics. The laboratory testing consisted of visual and textural sample inspection, moisture content and dry density determinations, maximum dry density and optimum moisture content, Atterberg Limits and gradation analyses as well as consolidation and "R-value tests. Results of the various laboratory tests are presented in the Appendix, Figure No's. A-8 through A-12.

## SEISMICITY AND EARTHQUAKE SOURCES

The seismicity of the southwest Washington and northwest Oregon area, and hence the potential for ground shaking, is controlled by three separate fault mechanisms. These include the Cascadia Subduction Zone (CSZ), the mid-depth intraplate zone, and the relatively shallow crustal zone. Descriptions of these potential earthquake sources are presented below.

The CSZ is located offshore and extends from northern California to British Columbia. Within this zone, the oceanic Juan de Fuca Plate is being subducted beneath the continental North American Plate to the east. The interface between these two plates is located at a depth of approximately 15 to 20 kilometers (km). The seismicity of the CSZ is subject to several uncertainties, including the maximum earthquake magnitude and the recurrence intervals associated with various magnitude earthquakes. Anecdotal evidence of previous CSZ earthquakes has been observed within coastal marshes along the Washington and Oregon coastlines. Sequences of interlayered peat and sands have been interpreted to be the result of large Subduction zone earthquakes occurring at intervals on the order of 300 to 500 years, with the most recent event taking place approximately 300 years ago. A recent study by Geomatrix (1995) suggests that the maximum earthquake associated with the CSZ is moment magnitude (Mw) 8 to 9. This is based on an empirical expression relating moment magnitude to the area of fault rupture derived from earthquakes that have occurred within Subduction zones in other parts of the world. An Mw 9 earthquake would involve a rupture of the entire CSZ. As discussed by Geomatrix (1995) this has not occurred in other subduction zones that have exhibited much higher levels of historical seismicity than the CSZ and is considered unlikely. For the purpose of this study an earthquake of Mw 8.5 was assumed to occur within the CSZ.

The intraplate zone encompasses the portion of the subducting Juan de Fuca Plate located at a depth of approximately 30 to 50 km below western Washington and western Oregon. Very low levels of seismicity have been observed within the intraplate zone in western Oregon and western Washington. However, much higher levels of seismicity within this zone have been recorded in Washington and California. Several reasons for this seismic quiescence were suggested in the Geomatrix (1995) study and include changes in the direction of Subduction between Oregon, Washington, and British Columbia as well as the effects of volcanic activity along the Cascade Range. Historical activity associated with the intraplate zone includes the 1949 Olympia magnitude 7.1 and the 1965 Puget Sound magnitude 6.5 earthquakes.

Based on the data presented within the Geomatrix (1995) report, an earthquake of magnitude 7.25 has been chosen to represent the seismic potential of the intraplate zone.

The third source of seismicity that can result in ground shaking within the Vancouver and southwest Washington area is near-surface crustal earthquakes occurring within the North American Plate. The historical seismicity of crustal earthquakes in this area is higher than the seismicity associated with the CSZ and the intraplate zone. The 1993 Scotts Mills (magnitude 5.6) and Klamath Falls (magnitude 6.0), Oregon earthquakes were crustal earthquakes.

**Liquefaction**

Seismic induced soil liquefaction is a phenomenon in which loose, granular soils and some silty soils, located below the water table, develop high pore water pressures and lose strength due to ground vibrations induced by earthquakes. Soil liquefaction can result in lateral flow of material into river channels, ground settlements and increased lateral and uplift pressures on underground structures. Buildings supported on soils that have liquefied often settle and tilt and may displace laterally. Soils located above the ground water table cannot liquefy, but granular soils located above the water table may settle during the earthquake shaking.

Our review of the subsurface soil test hole logs from our exploratory field explorations (TH-#1 through TH-#6) and laboratory test results indicates that the site is generally underlain by medium stiff to medium dense, clayey, sandy silt silt to depths of at least eight (8) feet beneath existing site grades. Additionally, groundwater was generally not encountered at the site during our field exploration work to depths of at least eight (8) feet.

As such, due to the anticipated depth to groundwater and the apparent cohesive characteristics of the clayey, sandy silt to silty sand subgrade soils beneath the site, it is our opinion that the native soil deposits located beneath the subject site do not have the potential for liquefaction during the design earthquake motions previously described. A more detailed liquefaction assessment was not part of the scope of work for this Geotechnical Investigation.

**Landslides**

No ancient and/or active landslides were observed or are known to be present on the subject site. Additionally, due to the relatively flat-lying to gently sloping nature of the subject site, the risk of seismic induced slope instability at the site resulting in landslides and/or lateral earth movements do not appear to present a serious potential geologic hazard.

**Surface Rupture**

Although the site is generally located within a region of the country known for seismic activity, no known faults exist on and/or immediately adjacent to the subject site. The closest known fault is the Oatfield Fault which is located approximately 5 miles to the east of the subject property. As such, the risk of surface rupture due to faulting is considered negligible.

### Tsunami and Seiche

A tsunami, or seismic sea wave, is produced when a major fault under the ocean floor moves vertically and shifts the water column above it. A seiche is a periodic oscillation of a body of water resulting in changing water levels, sometimes caused by an earthquake. Tsunami and seiche are not considered a potential hazard at this site because the site is not near to the coast and/or there are no adjacent significant bodies of water.

### Flooding and Erosion

Stream flooding is a potential hazard that should be considered in lowland areas of Washington County and Forest Grove. The FEMA (Federal Emergency Management Agency) flood maps should be reviewed as part of the design for the proposed new memory care structures and the associated site improvements. Elevations of structures on the site should be designed based upon consultants reports, FEMA (Federal Emergency Management Agency), and Washington County requirements for the 100-year flood levels of any nearby creeks and/or streams such as Gales Creek.

## CONCLUSIONS AND RECOMMENDATIONS

### General

Based on the results of our field explorations, laboratory testing, and engineering analyses, it is our opinion that the site is suitable for the proposed new Forest Grove multi-family residential development and the associated site improvements provided that the recommendations contained within this report are properly incorporated into the design and construction of the project.

The primary features of concern at the site is the presence of the moisture sensitive clayey silt subgrade soils across the site and the presence of existing site improvements.

In regard to the moisture sensitive near surface clayey silt subgrade soils, we recommend that all site grading and earthwork operations be scheduled for the drier summer months which are typically June through September. With regard to the presence of the existing site improvements across the site, all existing site improvements should be removed in their entirety from the proposed new site improvements areas. As such, close monitoring by the Geotechnical Engineer during the site grading and foundation preparation is recommended.

The following sections of this report provide specific recommendations regarding subgrade preparation and grading as well as foundation and floor slab design and construction for the new Forest Grove multi-family residential development project.

## Site Preparation

As an initial step in site preparation, we recommend that the proposed new apartment building and/or paved parking lot area(s) and the associated structural and/or site improvement area(s) be stripped and cleared of any existing improvements, any existing fill materials, surface debris, existing vegetation, topsoil materials, and/or any other deleterious materials present at the time of construction. In general, we envision that the site stripping to remove existing vegetation and topsoil materials will generally be about 6 to 12 inches. However, localized areas requiring deeper removals will likely be encountered and should be evaluated at the time of construction by the Geotechnical Engineer. The stripped and cleared materials should be properly disposed of as they are generally considered unsuitable for use/reuse as fill materials.

Following the completion of the site stripping and clearing work and prior to the placement of any required structural fill materials and/or structural improvements, the exposed subgrade soils within the planned structural improvement area(s) should be inspected and approved by the Geotechnical Engineer and possibly proof-rolled with a half and/or fully loaded dump truck. Areas found to be soft or otherwise unsuitable should be over-excavated and removed or scarified and recompacted as structural fill. During wet and/or inclement weather conditions, proof rolling and/or scarification and recompaction as noted above may not be appropriate.

The on-site native silty subgrade soil materials are generally considered suitable for use/reuse as structural fill materials provided that they are free of organic materials, debris, and rock fragments in excess of about 6 inches in dimension. However, if site grading is performed during wet or inclement weather conditions, the use of the on-site silty native soil materials which contain significant silt and clay sized particles will be difficult at best. In this regard, during wet or inclement weather conditions, we recommend that an import structural fill material be utilized which should consist of a free-draining (clean) granular fill (sand & gravel) containing no more than about 5 percent fines. Representative samples of the materials which are to be used as structural fill materials should be submitted to the Geotechnical Engineer and/or laboratory for approval and determination of the maximum dry density and optimum moisture content for compaction.

In general, all site earthwork and grading activities should be scheduled for the drier summer months (June through September) if possible. However, if wet weather site preparation and grading is required, it is generally recommended that the stripping of topsoil materials be accomplished with a tracked excavator utilizing a large smooth-toothed bucket working from areas yet to be excavated. In this regard, we recommend that areas in which construction equipment will be traveling be protected by covering the exposed subgrade soils with a woven geotextile fabric such as Mirafi FW404 followed by at least 12 inches or more of crushed aggregate base rock. Further, the geotextile fabric should have a minimum Mullen burst strength of at least 250 pounds per square inch for puncture resistance and an apparent opening size (AOS) between the U.S. Standard No. 70 and No. 100 sieves.

All structural fill materials placed within the new apartment building and/or pavement areas should be moistened or dried as necessary to near (within 3 percent) optimum moisture conditions and compacted by mechanical means to a minimum of 92 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Structural fill materials should be placed in lifts (layers) such that when compacted do not exceed about 8 inches. Additionally, all fill materials placed within three (3) lineal feet of the perimeter (limits) of the proposed apartment structures and/or pavements should be considered structural fill. All aspects of the site grading should be monitored and approved by a representative of Redmond Geotechnical Services, LLC.

## Foundation Support

Based on the results of our investigation, it is our opinion that the site of the proposed new Forest Grove multi-family residential development is suitable for support of the two- and/or three-story wood-frame structures provided that the following foundation design recommendations are followed. The following sections of this report present specific foundation design and construction recommendations for the planned new apartment structures.

### Shallow Foundations

In general, conventional shallow continuous (strip) footings and individual (spread) column footings may be supported by approved native (untreated) subgrade clayey, sandy silt to silty sand subgrade soil materials and/or structural fill soils based on an allowable contact bearing pressure of about 2,000 pounds per square foot (psf). However, where higher allowable contact bearing pressures are desired and/or required, an allowable contact bearing pressure of 2,500 psf may be used for design where foundations are supported by 6 inches or more of compacted crushed aggregate base rock (granular) fill material, respectively. These recommended allowable contact bearing pressures are intended for dead loads and sustained live loads and may be increased by one-third for the total of all loads including short-term wind or seismic loads.

In general, continuous strip footings should have a minimum width of at least 16 inches and be embedded at least 18 inches below the lowest adjacent finish grade (includes frost protection). Individual column footings (where required) should be embedded at least 18 inches below grade and have a minimum width of at least 24 inches.

Total and differential settlements of foundations constructed as recommended above and supported by approved native subgrade soils or by properly compacted structural fill materials are expected to be well within the tolerable limits for this type of two- and/or three-story wood-frame structures and should generally be less than about 1-inch and 1/2-inch, respectively.

Allowable lateral frictional resistance between the base of the footing element and the supporting subgrade bearing soil can be expressed as the applied vertical load multiplied by a coefficient of friction of 0.35 and 0.50 for native silty subgrade soils and/or import gravel fill materials respectively.

In addition, lateral loads may be resisted by passive earth pressures on footings poured "neat" against in-situ (native) subgrade soils or properly backfilled with structural fill materials based on an equivalent fluid density of 250 pounds per cubic foot (pcf). This recommended value includes a factor of safety of approximately 1.5 which is appropriate due to the amount of movement required to develop full passive resistance.

## Floor Slab Support

In order to provide uniform subgrade reaction beneath concrete slab-on-grade floors, we recommend that the floor slab area be underlain by a minimum of 6 inches of free-draining (less than 5 percent passing the No. 200 sieve), well-graded, crushed rock. The crushed rock should help provide a capillary break to prevent migration of moisture through the slab. Additional moisture protection, where needed, can be provided by using a 10-mil polyolefin geo-membrane sheeting such as StegoWrap.

The base course materials should be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Where floor slab subgrade materials are undisturbed, firm and stable and where the underslab aggregate base rock section has been prepared and compacted as recommended above, we recommend that a modulus of subgrade reaction of 250 pci be used for design.

## Retaining/Below Grade Walls

Retaining and/or below grade walls should be designed to resist lateral earth pressures imposed by native soils or granular backfill materials as well as any adjacent surcharge loads. For walls which are unrestrained at the top and free to rotate about their base, we recommend that active earth pressures be computed on the basis of the following equivalent fluid densities:

**Non-Restrained Retaining Wall Pressure Design Recommendations**

| Slope Backfill (Horizontal/Vertical) | Equivalent Fluid Density/Silt (pcf) | Equivalent Fluid Density/Gravel (pcf) |
|---|---|---|
| Level | 35 | 30 |
| 3H:1V | 60 | 50 |
| 2H:1V | 90 | 80 |

For walls which are fully restrained at the top and prevented from rotation about their base, we recommend that at-rest earth pressures be computed on the basis of the following equivalent fluid densities:

**Restrained Retaining Wall Pressure Design Recommendations**

| Slope Backfill (Horizontal/Vertical) | Equivalent Fluid Density/Silt (pcf) | Equivalent Fluid Density/Gravel (pcf) |
|---|---|---|
| Level | 55 | 50 |
| 3H:1V | 75 | 70 |
| 2H:1V | 95 | 90 |

The above recommended values assume that the walls will be adequately drained to prevent the buildup of hydrostatic pressures. Where wall drainage will not be present and/or if adjacent surcharge loading is present, the above recommended values will be significantly higher. For seismic loading, we recommend an additional uniform pressure of 6H where H is the height of the wall in feet.

Backfill materials behind walls should be compacted to 90 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Special care should be taken to avoid over-compaction near the walls which could result in higher lateral earth pressures than those indicated herein. In areas within three (3) to five (5) feet behind walls, we recommend the use of hand-operated compaction equipment.

## Pavements

Flexible pavement design for the project was determined on the basis of projected (anticipated) traffic volume and loading conditions relative to laboratory subgrade soil strength ("R"-value) characteristics. Based on a laboratory subgrade "R"-value of 33 (Resilient Modulus = 5,000 to 10,000) and utilizing the Asphalt Institute Flexible Pavement Design Procedures and/or the American Association of State Highway and Transportation Officials (AASHTO) 1993 "Design of Pavement Structures" manual, we recommend that the asphaltic concrete pavement section(s) for the new apartment development areas at the site consist of the following:

| | Asphaltic Concrete Thickness (inches) | Crushed Base Rock Thickness (inches) |
|---|---|---|
| Automobile Parking Areas | 3.0 | 8.0 |
| Automobile Drive Areas | 3.0 | 10.0 |

Note: Where heavy vehicle traffic is anticipated such as those required for fire and/or garbage trucks, we recommend that the automobile drive area pavement section be increased by adding 1.0 inches of asphaltic concrete and 2.0 inches of aggregate base rock. Additionally, the above recommended flexible pavement section(s) assumes a design life of 20 years.

**Pavement Subgrade, Base Course & Asphalt Materials**

The above recommended pavement section(s) were based on the design assumptions listed herein and on the assumption that construction of the pavement section(s) will be completed during an extended period of reasonably dry weather.

All thicknesses given are intended to be the minimum acceptable. Increased base rock sections and the use of a woven geotextile fabric may be required during wet and/or inclement weather conditions and/or in order to adequately support construction traffic and protect the subgrade during construction. Additionally, the above recommended pavement section(s) assume that the subgrade will be prepared as recommended herein, that the exposed subgrade soils will be properly protected from rain and construction traffic, and that the subgrade is firm and unyielding at the time of paving. Further, it assumes that the subgrade is graded to prevent any ponding of water which may tend to accumulate in the base course.

Pavement base course materials should consist of well-graded 1-1/2 inch and/or 3/4-inch minus crushed base rock having less than 5 percent fine materials passing the No. 200 sieve. The base course and asphaltic concrete materials should conform to the requirements set forth in the latest edition of the Oregon Department of Transportation, Standard Specifications for Highway Construction. The base course materials should be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. The asphaltic concrete paving materials should be compacted to at least 92 percent of the theoretical maximum density as determined by the ASTM D-2041 (Rice Gravity) test method.

**Wet Weather Grading and Soft Spot Mitigation**

Construction of the proposed new paved site improvements is generally recommended during dry weather. However, during wet weather grading and construction, excavation to subgrade can proceed during periods of light to moderate rainfall provided that the subgrade remains covered with aggregate. A total aggregate thickness of 8- to 12-inches may be necessary to protect the subgrade soils from heavy construction traffic. Construction traffic should not be allowed directly on the exposed subgrade but only atop a sufficient compacted base rock thickness to help mitigate subgrade pumping. If the subgrade becomes wet and pumps, no construction traffic shall be allowed on the road alignment. Positive site drainage shall be maintained if site paving will not occur before the on-set of the wet season.

Depending on the timing for the project, any soft subgrade found during proof-rolling or by visual observations can either be removed and replaced with properly dried and compacted fill soils or removed and replaced with compacted crushed aggregate. However, and where approved by the Geotechnical Engineer, the soft area may be covered with a bi-axial geogrid and covered with compacted crushed aggregate.

**Soil Shrink-Swell and Frost Heave**

The results of the laboratory "R"-value tests indicate that the native subgrade soils possess a low to moderate expansion potential. As such, the exposed subgrade soils should not be allowed to completely dry and should be moistened to near optimum moisture content (plus or minus 3 percent) at the time of the placement of the crushed aggregate base rock materials. Additionally, exposure of the subgrade soils to freezing weather may result in frost heave and softening of the subgrade. As such, all subgrade soils exposed to freezing weather should be evaluated and approved by the Geotechnical Engineer prior to the placement of the crushed aggregate base rock materials.

## Excavation/Slopes

Temporary excavations of up to about four (4) feet in depth may be constructed with near vertical inclinations. Temporary excavations greater than about four (4) feet but less than eight (8) feet should be excavated with inclinations of at least 1 to 1 (horizontal to vertical) or properly braced/shored. Where excavations are planned to exceed about eight (8) feet, this office should be consulted. All shoring systems and/or temporary excavation bracing for the project should be the responsibility of the excavation contractor.

Depending on the time of year in which trench excavations occur, trench dewatering may be required in order to maintain dry working conditions if the invert elevations of the proposed utilities are located at and/or below the groundwater level. If groundwater is encountered during utility excavation work, we recommend placing trench stabilization materials along the base of the excavation. Trench stabilization materials should consist of 1-foot of well-graded gravel, crushed gravel, or crushed rock with a maximum particle size of 4 inches and less than 5 percent fines passing the No. 200 sieve. The material should be free of organic matter and other deleterious material and placed in a single lift and compacted until well keyed.

## Surface Drainage/Groundwater

We recommend that positive measures be taken to properly finish grade the site so that drainage waters from the building and landscaping areas as well as adjacent properties or buildings are directed away from the new apartment building foundations and/or floor slabs. All roof drainage should be directed into conduits that carry runoff water away from the apartment buildings to a suitable outfall. Roof downspouts should not be connected to foundation drains. A minimum ground slope of about 2 percent is generally recommended in unpaved areas around the apartment buildings.

Groundwater was not encountered at the site in any of the exploratory test holes (TH-#1 through TH-#6) at the time of excavating to depths of at least eight (8) feet beneath existing site grades. However, groundwater elevations in the area and/or beneath the subject site may fluctuate seasonally and may temporarily pond/perch near the ground surface during periods of prolonged rainfall.

As such, based on our current understand of the site grading required to bring the subject site to finish design grades, we are of the opinion that an underslab drainage system is not required for the proposed new apartment structures. However, due to the presence of near surface clayey, sandy silt to silty sand subgrade soils within the foundation bearing level of the proposed new apartment structures, we are generally of the opinion that a footing/foundation drainage system should be utilized around the perimeter of the proposed apartment structures. Additionally, a foundation drain is recommended for any below grade footing and/or retaining walls. A typical recommended perimeter footing and/or retaining wall drain detail is shown on Figure No. 3.

## Design Infiltration Rates

Based on the results of our field infiltration testing, we recommend using the following infiltration rate to design any on-site near surface storm water infiltration and/or disposal systems for the project:

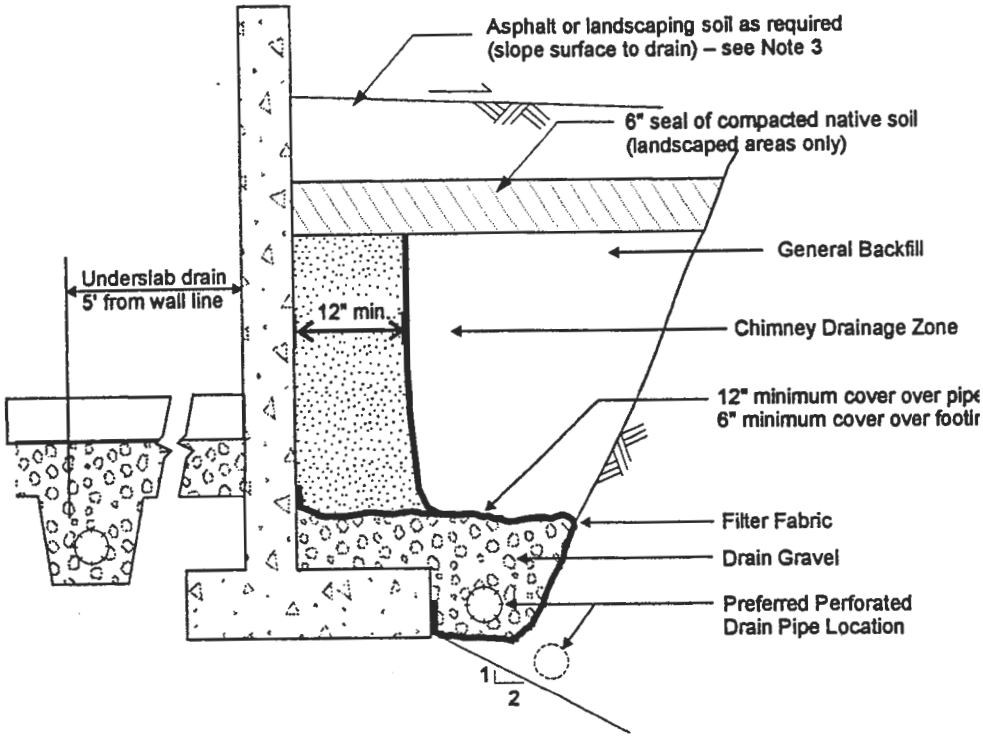
| Subgrade Soil Type | Recommended Infiltration Rate |
|---|---|
| Clayey, sandy SILT to silty SAND (ML/SM) | 0.6 inches per hour (in/hr) |

Note: A safety factor of two (2) was used to calculate the above recommended design infiltration rate. Additionally, given the gradational variability of the on-site sandy, clayey sit subgrade soils beneath the site as well as the anticipation of some site grading for the project, it is generally recommended that field testing be performed during and/or following construction of any on-site storm water infiltration system(s) in order to confirm that the above recommended design infiltration rates are appropriate.

## Seismic Design Considerations

Structures at the site should be designed to resist earthquake loading in accordance with the methodology described in the 2019 and/or latest edition of the State of Oregon Structural Specialty Code (OSSC), ASCE 7-16 and/or Amendments to the 2018 International Building Code (IBC). The maximum considered earthquake ground motion for short period and 1.0 period spectral response may be determined from the Oregon Structural Specialty Code, ASSCE 7-16 and/or the 2015 National Earthquake Hazard Reduction Program (NEHRP) "Recommended Provisions for Seismic Regulations for New Buildings and Other Structures" published by the Building Seismic Safety Council. We recommend Site Class "D" be used for design.

Using this information, the structural engineer can select the appropriate site coefficient values ($F_a$ and $F_v$) from ASCE 7-16 and/or the 2018 IBC to determine the maximum considered earthquake spectral response acceleration for the project. However, we have assumed the following response spectrum for the project:




**SCHEMATIC - NOT TO SCALE**

NOTES:

1. Filter Fabric to be non-woven geotextile (Amoco 4545, Mirafi 140N, or equivalent)
2. Lay perforated drain pipe on minimum 0.5% gradient, widening excavation as required. Maintain pipe above 2:1 slope, as shown.
3. All-granular backfill is recommended for support of slabs, pavements, etc. (see text for structural fill).
4. Drain gravel to be clean, washed ¾" to 1½" gravel.
5. General backfill to be on-site gravels, or ¾"-0 or 1½"-0 crushed rock compacted to 92% Modified Proctor (AASHTO T-180).
6. Chimney drainage zone to be 12" wide (minimum) zone of clean washed, medium to coarse sand or drain gravel if protected with filter fabric. Alternatively, prefabricated drainage structures (Miradrain 6000 or similar) may be used.

# TYPICAL PERIMETER FOOTING/RETAINING WALL DRAIN DETAIL

| Project No. 1552.006.G | FOREST GROVE APARTMENTS<br>TL'S 5601 & 5602, 1930 23RD AVENUE | Figure No. 3 |
|---|---|---|

**Table 1. ASCE 7-16 Seismic Design Parameters**

| Site Class | Ss | S1 | Fa | Fv | SMS | SM1 | SDs | SD1 |
|---|---|---|---|---|---|---|---|---|
| D | 0.925 | 0.455 | 1.130 | 1.545 | 1.045 | 0.839 | 0.697 | 0.559 |

Notes: 1. Ss and S1 were established based on the USGS 2015 mapped maximum considered earthquake spectral acceleration maps for 2% probability of exceedence in 50 years.

2. Fa and Fv were established based on ASCE 7-16 using the selected Ss and S1 values.

## CONSTRUCTION MONITORING AND TESTING

We recommend that **Redmond Geotechnical Services, LLC** be retained to provide construction monitoring and testing services during all earthwork operations for the proposed new Forest Grove multi-family residential development project. The purpose of our monitoring services would be to confirm that the site conditions reported herein are as anticipated, provide field recommendations as required based on the actual conditions encountered, document the activities of the grading contractor and assess his/her compliance with the project specifications and recommendations. It is important that our representative meet with the contractor prior to grading to help establish a plan that will minimize costly over-excavation and site preparation work. Of primary importance will be observations made during site preparation, structural fill placement, footing excavations and construction as well as any retaining wall backfill.

## CLOSURE AND LIMITATIONS

This report is intended for the exclusive use of the addressee and/or their representative(s) to use to design and construct the proposed new multi-family (apartment) building structures and the associated site improvements described herein as well as to prepare any related construction documents. The conclusions and recommendations contained in this report are based on site conditions as they presently exist and assume that the explorations are representative of the subsurface conditions between the explorations and/or across the study area. The data, analyses, and recommendations herein may not be appropriate for other structures and/or purposes. We recommend that parties contemplating other structures and/or purposes contact our office. In the absence of our written approval, we make no representation and assume no responsibility to other parties regarding this report. Additionally, the above recommendations are contingent on Redmond Geotechnical Services, LLC being retained to provide all site inspections and construction monitoring services associated with the site grading and earthwork operations as well as all foundation excavation and preparation work for this project. Redmond Geotechnical Services, LLC will not assume any responsibility and/or liability for any engineering judgment, inspection and/or testing services performed by others.

It is the owners/developers responsibility for insuring that the project designers and/or contractors involved with this project implement our recommendations into the final design plans, specifications and/or construction activities for the project. Further, in order to avoid delays during construction, we recommend that the final design plans and specifications for the project be reviewed by our office to evaluate as to whether our recommendations have been properly interpreted and incorporated into the project.

If during any future site grading and construction, subsurface conditions different from those encountered in the explorations are observed or appear to be present beneath excavations, we should be advised immediately so that we may review these conditions and evaluate whether modifications of the design criteria are required. We also should be advised if significant modifications of the proposed site development are anticipated so that we may review our conclusions and recommendations.

## LEVEL OF CARE

The services performed by the Geotechnical Engineer for this project have been conducted with that level of care and skill ordinarily exercised by members of the profession currently practicing in the area under similar budget and time restraints. No warranty or other conditions, either expressed or implied, is made.

## REFERENCES

Adams, John, 1984, Active Deformation of the Pacific Northwest Continental Margin: Tectonics, v.3, no. 4, p. 449-472.

Applied Technology Council, ATC-13, 1985, Earthquake Damage Evaluation Data for California.

Atwater, B.F., 1992, Geologic evidence for earthquakes during the past 2000 years along the Copalis River, southern coastal Washington: Journal of Geophysical Research, v. 97, p. 1901-1919.

Atwater, B.F., 1987a, A periodic Holocene recurrence of widespread, probably coseismic Subsidence in southwestern Washington: EOS, v. 68, no. 44.

Atwater, B.F., 1987b, Evidence for great Holocene earthquakes along the outer coast of Washington State: Science, v. 236, no. 4804, pp. 942-944.

Campbell, K.W., 1990, Empirical prediction of near-surface soil and soft-rock ground motion for the Diablo Canyon Power Plant site, San Luis Obispo County, California: Dames & Moore report to Lawrence Livermore National Laboratory.

Carver, G.A., and Burke, R.M., 1987, Late Holocene paleoseismicity of the southern end of the Cascadia Subduction zone [abs.]: EOS, v. 68, no. 44, p. 1240.

Chase, R.L., Tiffin, D.L., Murray, J.W., 1975, The western Canadian continental margin: In Yorath, C.J., Parker, E.R., Glass, D.J., editors, Canada's continental margins and offshore petroleum exploration: Canadian Society of Petroleum Geologists Memoir 4, p. 701-721.

Crouse, C.B., 1991a, Ground motion attenuation equations for earthquakes on the Cascadia Subduction Zone: Earthquake Spectra, v. 7, no. 2, pp. 201-236.

Crouse, C.B., 1991b, Errata to Crouse (1991a), Earthquake Spectra, v. 7, no. 3, p. 506.

Darienzo, M.E., and Peterson, C.D., 1987, Episodic tectonic subsidence recorded in late Holocene salt marshes, northern Oregon central Cascadia margin: Tectonics, v. 9, p. 1-22.

Darienzo, M.E., and Peterson, C.D., 1987, Episodic tectonic subsidence recorded in late Holocene salt marshes northwest Oregon [abs]: EOS, v. 68, no. 44, p. 1469.

EERI (Earthquake Engineering Research Institute), 1993, The March 25, 1993, Scotts Mill Earthquake, Western Oregon's Wake-Up Call: EERI Newsletter, Vol. 27, No. 5, May.

Geomatrix, 1995 Seismic Design Mapping, State of Oregon: Final Report to Oregon Department of Transportation, January.

Geologic Map Series (GMS-49), Map of Oregon Seismicity, 1841-1986 dated 1986.

Geologic Map Series (GMS-97), Geologic Map of the Salem West Quadrangle, Marion and Polk Counties, Oregon dated 1981.

Grant, W.C., and McLaren, D.D., 1987, Evidence for Holocene Subduction earthquakes along the northern Oregon coast [abs]: EOS v. 68, no. 44, p. 1239.

Grant, W.C., Atwater, B.F., Carver, G.A., Darienzo, M.E., Nelson, A.R., Peterson, C.D., and Vick, G.S., 1989, Radiocarbon dating of late Holocene coastal subsidence above the Cascadia Subduction zone-compilation for Washington, Oregon, and northern California, [abs]: EOS Transactions of the American Geophysical Union, v. 70, p. 1331.

International Conference of Building Officials (ICBO), 1994, Uniform Building Code: 1994 Edition, Whittier, CA. 1994.

Joyner, W.B., and Boore, D.M., 1998, Measurement, characterization and prediction of strong ground motion: Earthquake Engineering and Soil Dynamics II – Recent Advances in Ground Motion Evaluation, ASCE Geotech. Special Publ. No. 20, p. 43-102.

Riddihough, R.P., 1984, Recent movements of the Juan de Fuca plate system: Journal of Geophysical Research, v. 89, no. B8, p. 6980-6994.

Youngs, R.R., Day, S.M., and Stevens, J.L., 1998, Near field ground motions on rock for large Subduction earthquakes: Earthquake Engineering and Soil Dynamics II – Recent Advances in Ground Motion Evaluation, ASCE Geotech. Special Publ. No. 20, p. 445-462.

# Appendix "A"

**Test Pit Logs and Laboratory Test Results**

# APPENDIX

# FIELD EXPLORATIONS AND LABORATORY TESTING

## FIELD EXPLORATION

Subsurface conditions at the site were explored by excavating six (6) exploratory test holes on December 12, 2024. The approximate location of the test hole explorations are shown in relation to the existing and/or proposed new site improvements on the Site Exploration Plan, Figure No. 2.

The test holes were excavated in general conformance with ASTM Methods in Vol. 4.08, D-1586-94 and D-1587-83. The test holes were excavated to depths ranging from about five (5.0) to eight (8.0) feet beneath existing site grades. Detailed logs of the test holes are presented on the Log of Test Pits, Figure No's. A-5 through A-7. The soils were classified in accordance with the Unified Soil Classification System (USCS), which is outlined on Figure No. A-4.

The exploration program was coordinated by a field engineer who monitored the excavating and exploration activity, obtained representative samples of the subsurface soils encountered, classified the soils by visual and textural examination, and maintained continuous logs of the subsurface conditions. Disturbed and/or undisturbed samples of the subsurface soils were obtained at appropriate depths and/or intervals and placed in plastic bags and/or with a thin walled ring sample.

Groundwater was not encountered within any of the exploratory test holes (TH-#1 through TH-#6) at the time of excavating at depths of between five (5.0) to eight (8.0) feet beneath existing site grades.

## LABORATORY TESTING

Pertinent physical and engineering characteristics of the soils encountered during our subsurface investigation were evaluated by a laboratory testing program to be used as a basis for selection of soil design parameters and for correlation purposes. Selected tests were conducted on representative soil samples. The program consisted of tests to evaluate the existing (in-situ) moisture-density, maximum dry density and optimum moisture content, Atterberg Limits and gradational characteristics as well as consolidation and "R"-value tests.

### Dry Density and Moisture Content Determinations

Density and moisture content determinations were performed on both disturbed and relatively undisturbed samples from the test hole explorations in general conformance with ASTM Vol. 4.08 Part D-216. The results of these tests were used to calculate existing overburden pressures and to correlate strength and compressibility characteristics of the soils. Test results are shown on the boring logs at the appropriate sample depths.

**Maximum Dry Density**

One (1) Maximum Dry Density and Optimum Moisture Content test was performed on a representative sample of the on-site sandy, clayey silt subgrade soils in accordance with ASTM Vol. 4.08 Part D-1557. This test was conducted to help establish various engineering properties for use as structural fill. The test results are presented on Figure No. A-8.

**Atterberg Limits**

Liquid Limit (LL) and Plastic Limit (PL) tests were performed on a representative sample of the sandy, clayey silt to silty sand subgrade soils in accordance with ASTM Vol. 4.08 Part D-4318-85. The test results were conducted to help facilitate the classification of the subgrade soils and for correlation purposes. The test results are shown graphically on Figure No. A-9.

**Gradation Analysis**

Gradation analyses were performed on a representative sample of the clayey, sandy silt to silty sand subsurface soils in accordance with ASTM Vol. 4.08 Part D-422. The test results were used to classify the soil in accordance with the Unified Soil Classification System (USCS). The test results are shown graphically on Figure No. A-10.

**Consolidation Test**

One (1) Consolidation test was performed on a representative sample of the clayey, sandy silt to silty sand subgrade soil to assess the compressibility characteristics of the underlying subgrade soils in accordance with ASTM Vol. 4.08 Part D-2435-80.

Conventional loading increments of 100, 200, 400, ... 12,800 psf were applied after the 100 percent time of primary consolidation was identified for each loading increment. The samples were unloaded and allowed to rebound after the completion of the loading sequence. Deflection versus time readings were recorded for all load increments from 100 through 12,800 psf. The deflection corresponding to 100 percent primary consolidation was plotted on the consolidation strain versus consolidation pressure curve, which is presented on Figure No. A-11.

**"R"-Value Tests**

One (1) "R"-value test was performed on a remolded sample of the clayey, sandy silt to silty sand subgrade soil in accordance with ASTM Vol. 4.08 Part D-2844. The test results were used to help evaluate the subgrade soils supporting and performance capabilities when subjected to traffic loading. The test results are shown on Figure No. A-12.

The following figures are attached and complete the Appendix:

| | |
|---|---|
| Figure No. A-4 | Key to Exploratory Test Pit Logs |
| Figure No's. A-5 through A-7 | Log of Test Pits |
| Figure No. A-8 | Maximum density Testy Results |
| Figure No. A-9 | Atterberg Limits Test Results |
| Figure No. A-10 | Gradation Test Results |
| Figure No. A-11 | Consolidation Test Results |
| Figure No. A-12 | "R"-Resistance Value Test Results |

| PRIMARY DIVISIONS | | | GROUP SYMBOL | SECONDARY DIVISIONS |
|---|---|---|---|---|
| COARSE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE | GRAVELS — MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE | CLEAN GRAVELS (LESS THAN 5% FINES) | GW | Well graded gravels, gravel-sand mixtures, little or no fines. |
| | | | GP | Poorly graded gravels or gravel-sand mixtures, little or no fines. |
| | | GRAVEL WITH FINES | GM | Silty gravels, gravel-sand-silt mixtures, non-plastic fines. |
| | | | GC | Clayey gravels, gravel-sand-clay mixtures, plastic fines. |
| | SANDS — MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE | CLEAN SANDS (LESS THAN 5% FINES) | SW | Well graded sands, gravelly sands, little or no fines. |
| | | | SP | Poorly graded sands or gravelly sands, little or no fines. |
| | | SANDS WITH FINES | SM | Silty sands, sand-silt mixtures, non-plastic fines. |
| | | | SC | Clayey sands, sand-clay mixtures, plastic fines. |
| FINE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE | SILTS AND CLAYS — LIQUID LIMIT IS LESS THAN 50% | | ML | Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity. |
| | | | CL | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays. |
| | | | OL | Organic silts and organic silty clays of low plasticity. |
| | SILTS AND CLAYS — LIQUID LIMIT IS GREATER THAN 50% | | MH | Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts. |
| | | | CH | Inorganic clays of high plasticity, fat clays. |
| | | | OH | Organic clays of medium to high plasticity, organic silts. |
| HIGHLY ORGANIC SOILS | | | Pt | Peat and other highly organic soils. |

## DEFINITION OF TERMS

| U.S. STANDARD SERIES SIEVE | | | | CLEAR SQUARE SIEVE OPENINGS | | | | |
|---|---|---|---|---|---|---|---|---|
| 200 | 40 | 10 | 4 | 3/4" | 3" | 12" | | |
| SILTS AND CLAYS | SAND | | | GRAVEL | | COBBLES | BOULDERS | |
| | FINE | MEDIUM | COARSE | FINE | COARSE | | | |

## GRAIN SIZES

| SANDS, GRAVELS AND NON-PLASTIC SILTS | BLOWS/FOOT† |
|---|---|
| VERY LOOSE | 0 - 4 |
| LOOSE | 4 - 10 |
| MEDIUM DENSE | 10 - 30 |
| DENSE | 30 - 50 |
| VERY DENSE | OVER 50 |

**RELATIVE DENSITY**

| CLAYS AND PLASTIC SILTS | STRENGTH‡ | BLOWS/FOOT† |
|---|---|---|
| VERY SOFT | 0 - 1/4 | 0 - 2 |
| SOFT | 1/4 - 1/2 | 2 - 4 |
| FIRM | 1/2 - 1 | 4 - 8 |
| STIFF | 1 - 2 | 8 - 16 |
| VERY STIFF | 2 - 4 | 16 - 32 |
| HARD | OVER 4 | OVER 32 |

**CONSISTENCY**

†Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).

‡Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

REDMOND GEOTECHNICAL SERVICES
PO BOX 20547 • PORTLAND, OREGON 97294

# KEY TO EXPLORATORY TEST PIT LOGS
## Unified Soil Classification System (ASTM D-2487)

FOREST GROVE APARTMENTS SITE
TAX LOT'S 5601 & 5602, 1930 23RD AVENUE

| PROJECT NO. | DATE | |
|---|---|---|
| 1552.006.G | 3/11/25 | Figure A-4 |

BACKHOE COMPANY: Redmond Geotechnical BUCKET SIZE: 3 inches DATE: 12/12/24

| DEPTH (FEET) | BAG SAMPLE | DENSITY TEST | DRY DENSITY (pcf) | MOISTURE CONTENT (%) | SOIL CLASS. (U.S.C.S.) | SOIL DESCRIPTION |
|---|---|---|---|---|---|---|
| | | | | | | TEST PIT NO. TH-#1 ELEVATION |
| 0 | | | | | GM | FILL: Gray-brown, wet, medium dense, crushed aggregate base rock |
| | X | | | 17.7 | ML | NATIVE GROUND: Medium to dark brown, very moist, medium stiff, slightly organic, sandy and clayey SILT (Old Topsoil Zone) |
| 5 | | | | | ML/SM | Medium brown, very moist, medium stiff to medium dense, clayey, sandy SILT to silty SAND |
| | | | | | | Total Depth = 7.0 feet<br>No groundwater encountered at time of exploration |
| 10 | | | | | | |
| 15 | | | | | | |
| | | | | | | TEST PIT NO. TH-#2 ELEVATION |
| 0 | | | | | GM | FILL: Gray-brown, wet, medium dense, crushed aggregate base rock |
| | | | | | ML | NATIVE GROUND: Medium to dark brown, very moist, medium stiff, slightly orgsnic, sandy and clayey SILT (Old Topsoil Zone) |
| 5 | | | | | ML/SM | Medium brown, very moist, medium stiff to medium dense, clayey, sandy SILT to silty SAND |
| | | | | | | Total Depth = 7.0 feet<br>No groundwater encountered at time of exploration |
| 10 | | | | | | |
| 15 | | | | | | |

# LOG OF TEST PITS

PROJECT NO. 1552.006.G | FOREST GROVE APARTMENTS SITE | FIGURE NO. A-5

BACKHOE COMPANY: Redmond Geotechnical BUCKET SIZE: 3 inches DATE: 12/12/24

| DEPTH (FEET) | BAG SAMPLE | DENSITY TEST | DRY DENSITY (pcf) | MOISTURE CONTENT (%) | SOIL CLASS. (U.S.C.S.) | SOIL DESCRIPTION |
|---|---|---|---|---|---|---|
| | | | | | | TEST PIT NO. TH-#3 ELEVATION |
| 0 | X | | | 18.1 | GM | FILL: Gray-brown, wet, medium dense, crushed aggregate base rock |
| | | | | | ML | NATIVE GROUND: Medium to dark brown, very moist, medium stiff, slightly organic, sandy and clayey SILT (Old Topsoil Zone) |
| 5 | | | | | ML/SM | Medium brown, very moist, medium stiff to medium dense, clayey, sandy SILT to silty SAND |
| | | | | | | Total Depth = 6.0 feet<br>No groundwater encountered at time of exploration |
| 10 | | | | | | |
| 15 | | | | | | |
| | | | | | | TEST PIT NO. TH-#4 ELEVATION |
| 0 | | | | | GM | FILL: Gray-brown, wet, medium dense, crushed aggregate base rock |
| | | | | | ML | NATIVE GROUND: Medium to dark brown, very moist, medium stiff, slightly organic, sandy, clayey SILT (Old Topsoil Zone) |
| 5 | | | | | ML/SM | Medium brown, very moist, medium stiff to medium dense, clayey, sandy SILT to silty SAND |
| | | | | | | Total Depth = 6.0 feet<br>No groundwater encountered at time of exploration |
| 10 | | | | | | |
| 15 | | | | | | |

# LOG OF TEST PITS

PROJECT NO. 1552.006.G | FOREST GROVE APARTMENTS SITE | FIGURE NO. A-6

BACKHOE COMPANY: Redmond Geotechnical BUCKET SIZE: 3 inches DATE: 12/12/24

| DEPTH (FEET) | BAG SAMPLE | DENSITY TEST | DRY DENSITY (pcf) | MOISTURE CONTENT (%) | SOIL CLASS. (U.S.C.S.) | SOIL DESCRIPTION |
|---|---|---|---|---|---|---|
| | | | | | | TEST PIT NO. TH-#5 ELEVATION |
| 0 | | | | | GM | FILL: Gray-brown, wet, medium dense, crusged aggregate base rock |
| | X | | | 16.3 | ML | NATIVE GROUND: Medium to dark brown, very moist, soft to medium stiff, sandy, clayey SILT (OLd Topsoil Zone) |
| 5 | | | | | ML/SM | Medium brown, very moist, medium stiff to medium dense, clayey, sandy SILT to silty SAND |
| | | | | | | Total Depth = 8.0 feet<br>No groundwater encountered at time of exploration |
| 10 | | | | | | |
| 15 | | | | | | |
| | | | | | | TEST PIT NO. TH-#6 ELEVATION |
| 0 | | | | | PC/GM | 4.0 inches of Portland Cement Concrete over 5.0 iinches of crushed aggregate base rock |
| | | | | | ML | NATIVE GROUND: Medium to dark brown, moist, medium stiff, slightly organic, sandy, clayey SILT (Old Topsoil Zone) |
| 5 | | | | | ML/SM | Medium brown, moist, medium stiff to medium dense, clayey, sandy SILT to silty SAND |
| | | | | | | Total Depth = 5.0 feet<br>No groundwater encountered at time of exploration |
| 10 | | | | | | |
| 15 | | | | | | |

## LOG OF TEST PITS

PROJECT NO. 1552.006.G | FOREST GROVE APARTMENTS SITE | FIGURE NO. A-7

MAXIMUM DENSITY TEST RESULTS

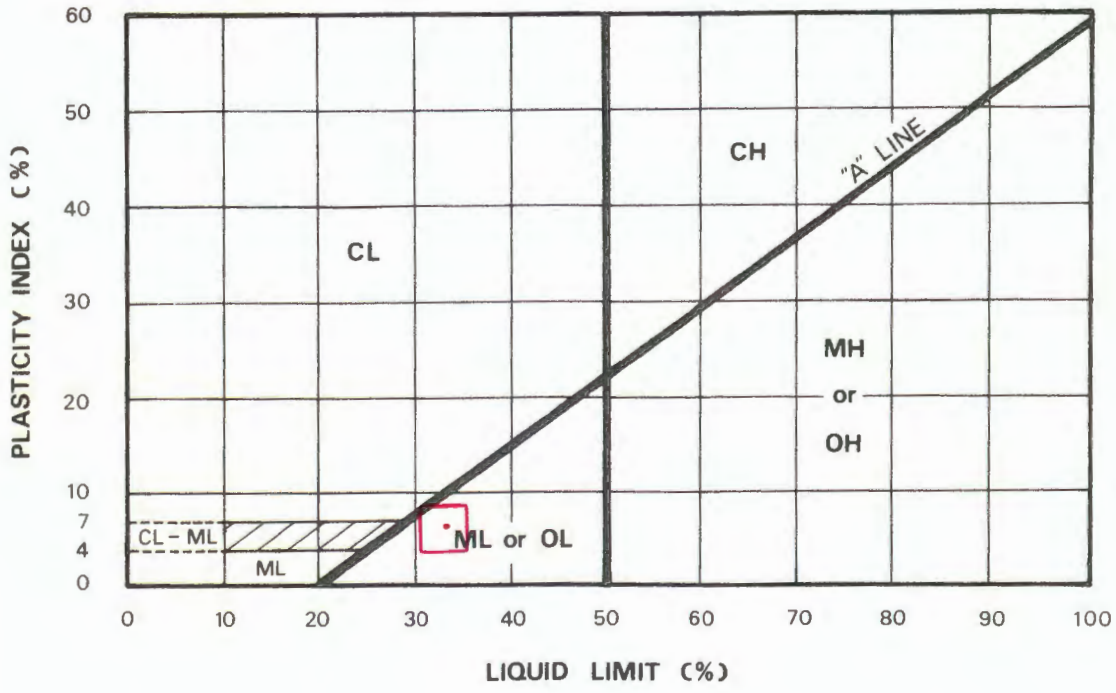
| SAMPLE LOCATION | SOIL DESCRIPTION | MAXIMUM DRY DENSITY (pcf) | OPTIMUM MOISTURE CONTENT (%) |
|---|---|---|---|
| TH-#3 @ 2.0' | Medium brown, clayey, sandy SILT to silty SAND (ML/SM) | 110.0 | 16.0 |

EXPANSION INDEX TEST RESULTS

| SAMPLE LOCATION | INITIAL MOISTURE (%) | COMPACTED DRY DENSITY (pcf) | FINAL MOISTURE (%) | VOLUMETRIC SWELL (%) | EXPANSION INDEX | EXPANSIVE CLASS. |
|---|---|---|---|---|---|---|
| | | | | | | |

**MAXIMUM DENSITY & EXPANSION INDEX TEST RESULTS**

PROJECT NO.: 1552.006.G | FOREST GROVE APARTMENTS SITE | FIGURE NO.: A-8




| KEY SYMBOL | BORING NO. | SAMPLE DEPTH (feet) | NATURAL WATER CONTENT % | LIQUID LIMIT % | PLASTICITY INDEX % | PASSING NO. 200 SIEVE % | LIQUIDITY INDEX | UNIFIED SOIL CLASSIFICATION SYMBOL |
|---|---|---|---|---|---|---|---|---|
| ⊡ | TH-#3 | 2.0 | 18.1 | 23.2 | 6.6 | 48.2 | | ML/SM |

REDMOND GEOTECHNICAL SERVICES
PO Box 20547 • Portland, Oregon 97294

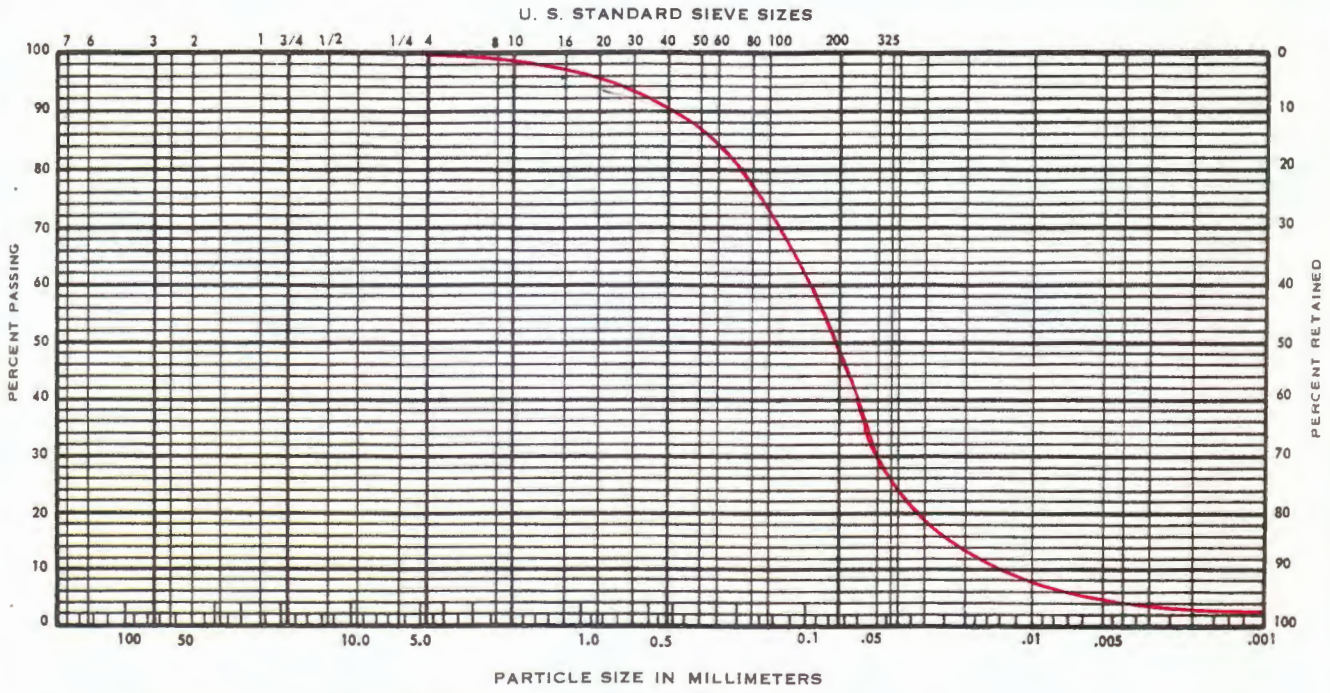
PLASTICITY CHART AND DATA

FOREST GROVE APARTMENTS SITE
TAX LOTS 5601 & 5602, 1930 23RD AVENUE

| PROJECT NO. | DATE | |
|---|---|---|
| 1552.006.G | 3/11/25 | Figure A-9 |

## UNIFIED SOIL CLASSIFICATION SYSTEM

(ASTM D 422-72)




| COBBLES | GRAVEL | | SAND | | | SILT AND CLAY |
|---|---|---|---|---|---|---|
| | COARSE | FINE | COARSE | MEDIUM | FINE | |

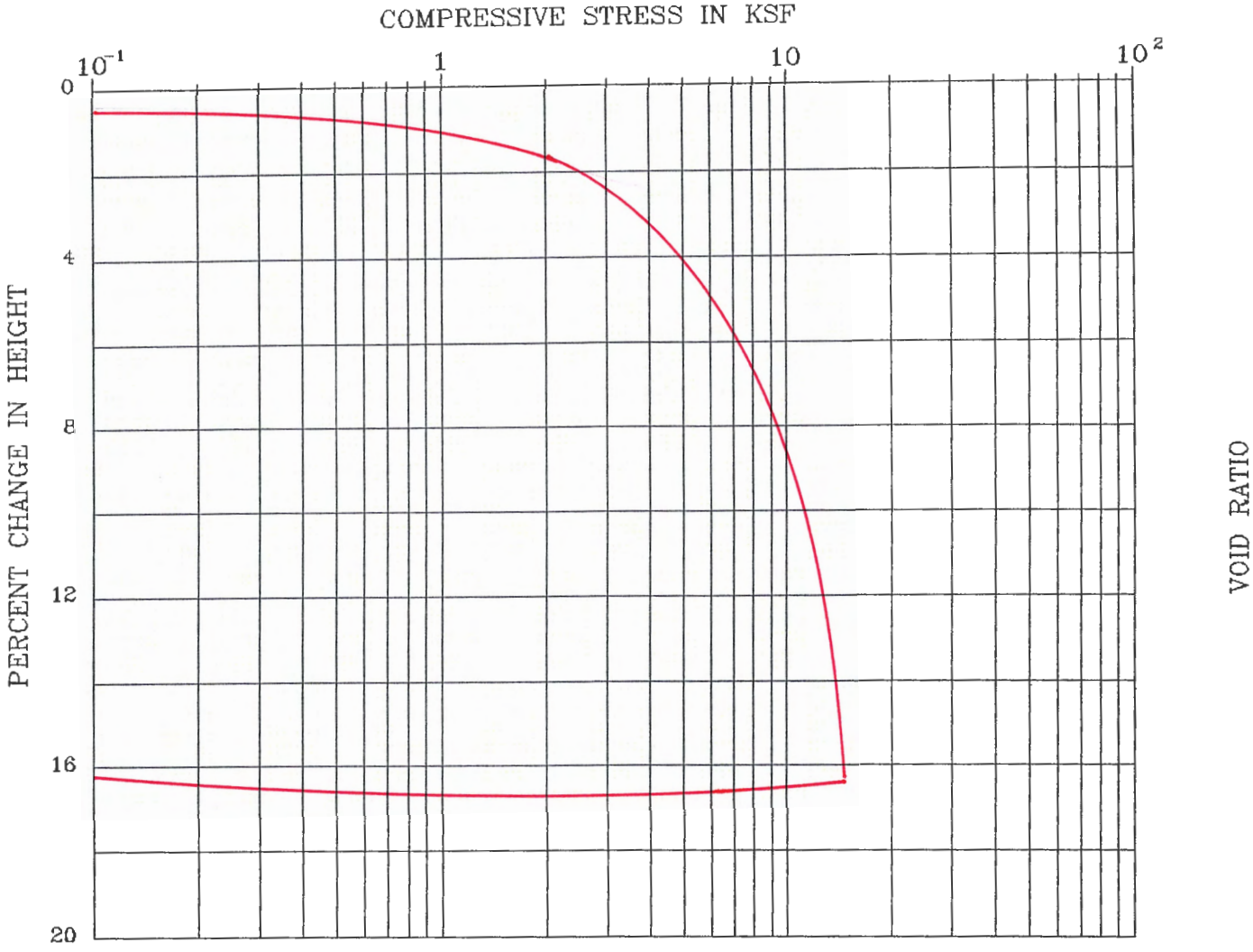
| KEY SYMBOL | BORING NO. | SAMPLE DEPTH (feet) | ELEV. (feet) | UNIFIED SOIL CLASSIFICATION SYMBOL | SAMPLE DESCRIPTION |
|---|---|---|---|---|---|
| — | TH-#3 | 2.0 | | ML/SM | Medium brown, clayey, sandy SILT to silty SAND |


REDMOND GEOTECHNICAL SERVICES
PO Box 20547 • Portland, Oregon 97294


GRADATION TEST DATA

FOREST GROVE APARTMENTS SITE
TAX LOTS 5601 & 5602, 1930 23RD AVENUE

| PROJECT NO. | DATE | FIGURE |
|---|---|---|
| 1552.006.G | 3/11/25 | A-10 |




BORING : TH-#3
DEPTH (ft) : 2.0
SPEC. GRAVITY : 2.5 (assumed)

DESCRIPTION : clayey, sandy SILT
LIQUID LIMIT : 23.2
PLASTIC LIMIT : 16.6

| | MOISTURE CONTENT (%) | DRY DENSITY (pcf) | PERCENT SATURATION | VOID RATIO |
|---|---|---|---|---|
| INITIAL | 18.1 | 89.5 | 82.3 | |
| FINAL | 7.7 | 111.6 | 95.4 | |

REDMOND GEOTECHNICAL SERVICES
PO BOX 20547 • PORTLAND, OREGON 97294

## CONSOLIDATION TEST DATA

FOREST GROVE APARTMENTS SITE
TAX LOTS 5601 & 5602, 1930 23RD AVENUE

| PROJECT NO. | DATE | |
|---|---|---|
| 1552.006.G | 3/11/25 | Figure A-11 |

# RESULTS OF R (RESISTANCE) VALUE TESTS

**SAMPLE LOCATION: TH-#1**

**SAMPLE DEPTH: 2.0 feet bgs**

| Specimen | A | B | C |
|---|---|---|---|
| Exudation Pressure (psi) | 219 | 322 | 431 |
| Expansion Dial (o.ooo1") | 0 | 0 | 1 |
| Expansion Pressure (psf) | 0 | 0 | 3 |
| Moisture Content (%) | 17.6 | 14.4 | 11.1 |
| Dry Density (pcf) | 106.7 | 109.4 | 112.5 |
| Resistance Value, "R" | 19 | 34 | 46 |
| "R"-Value at 300 psi Exudation Pressure = 33 | | | |

**SAMPLE LOCATION:**

**SAMPLE DEPTH:**

| Specimen | A | B | C |
|---|---|---|---|
| Exudation Pressure (psi) | | | |
| Expansion Dial (0.0001") | | | |
| Expansion Pressure (psf) | | | |
| Moisture Content (%) | | | |
| Dry Density (pcf) | | | |
| Resistance Value "R" | | | |
| "R"-Value at 300 psi Exudation Pressure = | | | |

**Figure No. A-12**

Clean Water Services

# SENSITIVE AREA PRE-SCREENING SITE ASSESSMENT

**Clean Water Services File Number** 24-002772

1. **Jurisdiction:** Forest Grove

2. **Property Information** (example: 1S234AB01400)
   Tax lot ID(s): 1N331CC05601 and 1N331CC05602

   ***OR* Site Address:** 1930 23rd Ave
   City, State, Zip: Forest Grove,OR,97116
   Nearest cross street:

3. **Owner Information**
   Name: Sunny Singh
   Company:
   Address: 1930 23rd Ave
   City, State, Zip: Forest Grove,OR,97116
   Phone/fax:
   Email:

4. **Development Activity** (check **all** that apply)
   - ☐ Addition to single family residence (rooms, deck, garage)
   - ☐ Lot line adjustment
   - ☐ Minor land partition
   - ☒ Residential condominium
   - ☐ Commercial condominium
   - ☐ Residential subdivision
   - ☐ Commercial subdivision
   - ☐ Single lot commercial
   - ☐ Multi lot commercial

   Other

4. **Applicant Information**
   Name: Scott McDonald
   Company: Studio 3 Architecture
   Address: 275 Court St
   City, State, Zip: Salem,Oregon,97301
   Phone/fax: 503.390.6500
   Email: scott@studio3architecture.com

6. **Will the project involve any off-site work?** ☐ Yes ☐ No ☒ Unknown
   Location and description of off-site work: Possible new curb or sidewalk in front of parcel.

7. **Additional comments or information that may be needed to understand your project:**

**This application does NOT replace Grading and Erosion Control Permits, Connection Permits, Building Permits, Site Development Permits, DEQ 1200-C Permit or other permits as issued by the Department of Environmental Quality, Department of State Lands and/or Department of the Army COE. All required permits and approvals must be obtained and completed under applicable local, state, and federal law.**

By signing this form, the Owner or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site. I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Print/type name Scott McDonald  Print/type title

Signature ONLINE SUBMITTAL  Date 11/22/2024

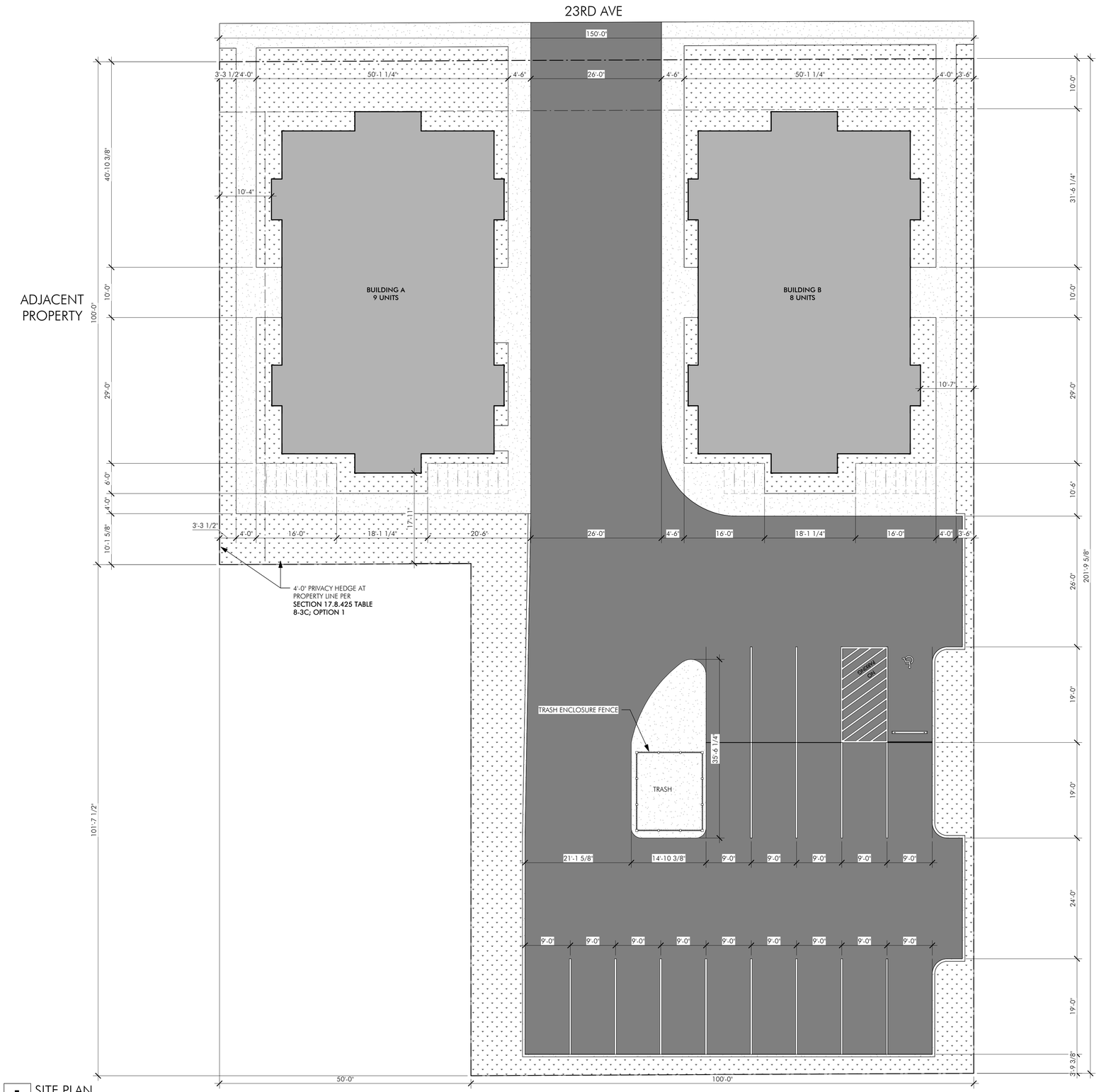
## FOR DISTRICT USE ONLY

- ☐ Sensitive areas potentially exist on site or within 200' of the site. **THE APPLICANT MUST PERFORM A SITE ASSESSMENT PRIOR TO ISSUANCE OF A SERVICE PROVIDER LETTER.** If Sensitive Areas exist on the site or within 200 feet on adjacent properties, a Natural Resources Assessment Report may also be required.
- ■ Based on review of the submitted materials and best available information sensitive areas do not appear to exist on site or within 200' of the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider Letter as required by Resolution and Order 19-5, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, State and federal law.
- ☐ Based on review of the submitted materials and best available information the above referenced project will not significantly impact the existing or potentially sensitive area(s) found near the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect additional water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider Letter as required by Resolution and Order 19-5, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, state and federal law.
- ☐ **THIS SERVICE PROVIDER LETTER IS NOT VALID UNLESS _____ CWS APPROVED SITE PLAN(S) ARE ATTACHED.**
- ☐ The proposed activity does not meet the definition of development or the lot was platted after 9/9/95 ORS 92.040(2). **NO SITE ASSESSMENT OR SERVICE PROVIDER LETTER IS REQUIRED.**

Reviewed by Mila Gonzalez Lima  Date 11/26/2024

Once complete, email to: **SPLReview@cleanwaterservices.org** • Fax: **(503) 681-4439**
**OR** mail to: SPL Review, Clean Water Services, 2550 SW Hillsboro Highway, Hillsboro, Oregon 97123

Revised 2/2020




1 SITE PLAN
0' 4' 8' 12' 16' 24' 32'
3/32" = 1'-0"

## SITE CALCULATIONS AND LEGEND:

| SITE ELEMENT DESCRIPTION: | LEGEND: | AREA: (sf) | PERCENTAGE: (%) |
|---|---|---|---|
| BUILDINGS: | | 5,749 sf | 23 % |
| LANDSCAPING: | | 5,500 sf | 22 % |
| ASPHALT PARKING PAVING: | | 11,035 sf | 44 % |
| CONCRETE PAVING & CURBS: | | 2,900 sf | 11 % |
| TOTALS: | | 25,184 sf | 100.0 % |

STUDIO 3 ARCHITECTURE INCORPORATED
275 COURT ST. NE
SALEM, OR 97301-3442
P: 503.390.6500
www.studio3architecture.com

IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND ANY COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORIGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

PROJECT # 2023-154
DATE: 10/14/2024
REVISIONS

# NEW APARTMENT BUILDING
# FOREST GROVE
1930 23rd Ave, Forest Grove, OR 97116

SHEET:
**A1.01**

Copyright © 2023-24 STUDIO 3 ARCHITECTURE, INC.

# STORMWATER MANAGEMENT REPORT

Prepared For:

Studio 3 Architecture

275 Court St. NE

Salem, OR 97301

Project Location:

1930 23rd Avenue Apartments

1930 23rd Avenue

Forest Grove, OR 97116

Prepared By:




FOR REVIEW

RENEWS: 6/30/2026

Westech Engineering, Inc.
3841 Fairview Industrial Drive SE, Suite 100
Salem, OR 97302
(503) 585-2474 FAX: (503) 585-3986

J.O. 3547.0000.0

March 2025

TABLE OF CONTENTS

SECTION A. PROJECT INTRODUCTION ..... A-1
SUMMARY OF IMPROVEMENTS ..... A-1
PURPOSE OF STORMWATER QUALITY & DETENTION ..... A-1
REGULATORY AGENCY APPROVALS ..... A-1
SUMMARY OF AGENCY STORMWATER QUALITY AND DETENTION REQUIREMENTS ..... A-1
SECTION B. STORMWATER PLAN NARRATIVE ..... B-1
POLLUTANTS OF CONCERN ..... B-1
NAME AND STATUS OF RECEIVING WATERS ..... B-1
GROUNDWATER MANAGEMENT AREA ..... B-1
NPDES PERMIT SITES ..... B-1
CONTRIBUTING IMPERVIOUS AREA ..... B-2
NARRATIVE DESCRIPTION OF STORMWATER MANAGEMENT PLAN ..... B-2
POLLUTANT REMOVAL SUMMARY ..... B-2
SECTION C. BASIN CHARACTERISTIC AND FLOW CONTROL SUMMARY ..... C-1
HYDROLOGICAL SUMMARY ..... C-1
HYDROLOGIC PARAMETERS, EXISTING AND DEVELOPED CONDITIONS ..... C-1
HYDROLOGIC ANALYSIS ..... C-2
FLOW CONTROL SYSTEM DESIGN ..... C-3
SECTION D. WATER QUALITY DESIGN ..... D-1
SECTION E. STORM DRAIN SYSTEM OPERATION & MAINTENANCE ..... E-1

LIST OF TABLES

Table C-1 | 24-Hour Design Storm Rainfall Depths..... C-1
Table C-2 | Basin Time of Concentration Characteristics ..... C-2
Table C-3 | Hydrologic Parameters..... C-2
Table C-4 | Summary of Flow Control ..... C-3

APPENDICES

I. ENVIRONMENTAL WATERSHED DATA
1. RECEIVING WATERS TMDL STATUS
2. KNOWN NEARBY NPDES PERMITS

II. DRAINAGE BASIN MAPS
1. PREDEVELOPED BASIN MAP
2. DEVELOPED BASIN MAP

III. BASIN HYDROLOGIC CHARACTERISTICS
1. SOILS MAPS WITH HYDROLOGIC SOIL GROUP
2. HYDROCAD ANALYSIS
3. DESIGN STORMS
4. GEOTECHNICAL REPORT

IV. OPERATION & MAINTENANCE PLANS
1. POLLUTION/FLOW CONTROL STRUCTURES

V. DETAIL DRAWINGS/ SPECIFICATIONS
1. POLLUTION/FLOW CONTROL STRUCTURES

VI. SUPPLEMENTAL CIVIL DRAWINGS
1. EROSION CONTROL PLAN, NOTES, & DETAILS
2. GRADING & DRAINAGE PLAN

# Section A. Project Introduction

## Summary of Improvements

The proposed project is located at 1930 23rd Ave. in Forest Grove, Oregon. The project site contains a total area of approximately 0.66 acres. The proposed project impacts approximately 0.49 acres within the site. The proposed project will also include construction of approximately 940 square feet of new/replaced sidewalk within the right of way. Refer to the Supplemental Civil Drawings in Appendix VI for a site map of the project area.

The project scope is to construct a new apartment complex. The building additions total approximately 5,750 square feet. The project scope includes site preparation and construction of the facilities which will include new buildings, a parking lot, and associated improvements.

Stormwater improvements associated with the project include the construction of combination stormwater quality treatment and detention facilities.

## Purpose of Stormwater Quality & Detention

The purpose of the stormwater quality and detention facilities are to remove pollutants from the stormwater and to control the stormwater release rates to mimic the runoff rates that occur for predeveloped site conditions. Management of stormwater for quality and quantity is required within the project drainage area to mitigate stormwater impacts in order to comply with Clean Water Services stormwater design standards.

## Regulatory Agency Approvals

This stormwater management report will address the stormwater requirements of the Clean Water Services stormwater design standards and applies the most restrictive standard if there is a conflict.

## Summary of Agency Stormwater Quality and Detention Requirements

Below is a summary of the Clean Water Services standards.

Clean Water Services Stormwater Standards:

- Peak runoff rates shall not exceed pre-development rates for the specific range of storms.
- Half of the post developed 2-year peak flow must be equal to or less than half of the predeveloped 2-year peak flow.
- The developed 2-, 10-, and 25-year peak flow rate must be equal to or less than the peak runoff rate of the predeveloped 2-, 10-, and 25-year, 24-hour storm events.

For this project all contributing impervious area runoff is controlled to the Clean Water Services Design Standards which is the same as HUD standards. Additionally, the project proposes to size water quality LID based on the CWS water quality flow (refer to section D of this report).

## Summary of Stormwater Facilities

The proposed stormwater quality treatment and detention facilities for the 1930 23rd Ave. Apartments project consists of an Oldcastle PerkFilter manhole, and underground detention. The following sections describe the facilities used for stormwater treatment and detention. The entire site is analyzed as one drainage basin with runoff detained in a series of underground detention pipes.

1. Developed Basin

   The Developed Basin consists primarily of roof and parking area. The stormwater from the Developed Basin is treated by one Oldcastle Perkfilter Manhole and detained by an underground detention pipe system. The Perkfilter Manhole will treat runoff from a total basin area of approximately 21,340 square feet.

Stormwater runoff from the overall developed site will not exceed predeveloped conditions for the design storms per Clean Water Services standards.

## Section B. Stormwater Plan Narrative

### Pollutants of Concern

The 23rd Avenue Apartments project consists of new apartment housing, parking facilities, and landscaped areas. The impervious area within the project scope that contributes pollutants to the stormwater runoff primarily consists of and roofs and roadways. These sources create project pollutants of concern most commonly associated with commercial development runoff. The Oregon Department of Environmental Quality (DEQ) lists the following as common pollutants associated with commercial development runoff:

- Solids and Sediment
- Metals (zinc, copper, lead, etc.)
- Petroleum Hydrocarbons (oil, grease, etc.)
- Nutrients (nitrogen, phosphorous, etc.)
- Pesticides, Herbicides & Fungicides

### Name and Status of Receiving Waters

Stormwater from the project site discharges into a public storm system which then discharges into Gales Creek approximately 3/4 miles downstream. Gales Creek is 303(d) listed for dissolved oxygen, and Chromium VI. Gales Creek is also TMDL approved for E. Coli and Temperature year-round. Refer to Appendix I for a copy of DEQ's water quality assessment, identification of pollutants sampled and water body status for the stream mentioned above.

The CWS standards are designed to protect streams from stormwater runoff from developed sites. By designing stormwater facilities to CWS standards TMDLs will not be infringed upon. Furthermore, dissolved oxygen (DO) will not be impacted because DO-reducing pollutants will be removed through contact with the filter within the Perkfilter manhole. E. coli will not be increased because storm drains are not susceptible to fecal sources. Chromium VI will be removed through contact with the filters in the designed Perkfilter manhole. Temperature in the summer is not a concern because there is rarely precipitation in the summer to produce runoff from the site. For the remainder of the year, stream temperature is primarily impacted by removal of shade trees along stream banks and stream widening. No trees are proposed for removal along the stream bank nor is the stream proposed to be modified.

### Groundwater Management Area

Upon review of available groundwater management information on the Oregon DEQ website it does not appear that the project is within a groundwater management area or EPA-designated sole source aquifer.

### NPDES Permit Sites

Refer to Appendix I for a list of Oregon DEQ water quality permitted facilities in the Portland area.

## Contributing Impervious Area

The proposed project will generate approximately 18,960 square feet of new or replaced impervious area. The contributing area was analyzed as one basin for predeveloped conditions and four basins for developed conditions as shown on the drawings in Appendix II. Refer to Table C-3 for a list of areas associated with the on-site post developed basins.

## Narrative Description of Stormwater Management Plan

The proposed stormwater Proprietary treatment of stormwater was designed per CWS design standards. Refer to Appendix II for a map of the site.

For design of the proprietary treatment please refer to Sections C and D.

1. Constraints

   In order to accommodate stormwater quality treatment and detention, project constraints were addressed. These constraints included low infiltration rates of the existing soils, and minimal area on site.

   The following sections describe how project constraints were accommodated.

   1) Developed Basin

      Due to limited infiltration infiltration and area on site infiltration-only facilities were deemed infeasible. The detention facilities were designed underground and the treatment facilities were designed as proprietary treatment. The site plan was modified to accommodate the required combination detention and water quality facilities.

## Pollutant Removal Summary

An integrated approach has been taken to address the pollutants of concern (sediment, metals, pest-herb-fungicides, and hydrocarbons) that can be expected to be produced in this project. The proposed proprietary treatment facility in this document removes sediment, metals, organics, and petroleum hydrocarbons.

The proprietary treatment facility is sized to meet the requirements of CWS design standards. Please refer to Section C for the facility sizing.

## Section C. Basin Characteristic and Flow Control Summary

The following sections describe the hydrology of the predeveloped site and flow control provided to conform to CWS design standards.

### Hydrological Summary

The 23rd Ave. Apartments project site plan will utilize proprietary treatment per CWS standards. The stormwater system will consist of one OldCastle Perkfilter manhole, and an underground detention pipe system to treat and detain the stormwater generated from the developed basin.

### Hydrologic Parameters, Existing and Developed Conditions

The hydrologic parameters that were used to complete the water quality and detention calculations are discussed below. The hydrologic parameters include basin areas, curve numbers (CN), predeveloped and developed time of concentrations (Tc), 24-hour rainfall depths for each recurrence interval, and the hydrological analysis method used to generate hydrographs. These basin characteristics are summarized in Table C-1, Table C-2, and Table C-3.

1) Hydrologic Analysis Methodology

HydroCAD modeling software was used to size the stormwater facilities. The Santa Barbara Unit Hydrograph Type 1A storm was used to model the required design storms. Per the CWS design standards the design storms used were the 1.25-inch, 24-hour (half the 2-year), 24-hour, the 2-year, 24-hour, the 10-year, 24-hour, and the 25-year, 24-hour storm events as listed in Table C-1.

2) 24-Hour Rainfall Depths

According to the CWS stormwater standards, the storm events used in this report include the water quality storm (half the 2-year = 1.25 inches), the 2-year, 24-hour, the 10-year 24-hour, and the 25-year 24-hour rainfall events as listed in Table C-1. These stormwater depths were specified in the CWS Design Standards, detail drawing number 1280. Refer to Appendix III for the technical memorandum of the results of the performed analysis.

Table C-1 | 24-Hour Design Storm Rainfall Depths

| | 24-Hour Rainfall Depths for CWS | | | | | | |
|---|---|---|---|---|---|---|---|
| Recurrence Interval, Years | WQ | 2 | 5 | 10 | 25 | 50 | 100 |
| 24-Hour Depths, Inches | 1.25 | 2.5 | 3.1 | 3.45 | 3.9 | 4.2 | 4.5 |

*Source: Clean Water Services Design Standards, Appendix B – Standard Details, Drawing #1280*

3) Curve Number Determination

Curve numbers (CNs) were assigned per Chapter 4.08.06.d. of the CWS Design Standards. The pre-developed project site contains primarily hydrologic soil group C soils per the NRCS Soil Report. Refer to Appendix III for the NRCS soil survey maps of the project area that correspond to basin CN's.

The predeveloped site is considered to have a CN of 74 per the CWS standards which corresponds to predeveloped impervious surfaces with C-rated soils in the HydroCAD model.

The developed impervious areas and pervious areas were assigned curve numbers of 98 and 75 respectively. The impervious areas were assigned a curve number of 98 which corresponds to roof, parking, and paved spaces. The pervious areas were assigned a curve number of 74 which correspond to hydrologic soil group C for amended soils within the HydroCAD model.

4) Time of Concentration Determination

Predeveloped and developed time of concentrations (Tc's) were calculated for each basin using the CWS design guidelines utilizing sheet and shallow concentrated flow equations.

Table C-2 summarizes the equation inputs for the predeveloped and developed Tc's. The developed Tc used was 5 minutes, which is the minimum Tc that can be used by the modeling software.

Table C-2 | Basin Time of Concentration Characteristics

| Basin ID | Overland Flow Length (ft) | Manning's n | Slope of Overland Flow (ft/ ft) | Tc (Min.) |
|---|---|---|---|---|
| Pre-Developed | 205 | 0.17 | 0.02 | 24.4 |
| Developed Basin | - | - | - | 5 |

5) Basin Characteristics

Table C-3 provides a summary of the drainage basins' impervious and pervious area (used for the developed calculations), and the predeveloped and developed curve numbers (CN) as previously discussed.

Table C-3 | Hydrologic Parameters

| Basin ID | Source (Roof/Road / Other) | Impervious Area (sf) | Pervious Area (sf) | Design Storm | | | CN |
|---|---|---|---|---|---|---|---|
| | | | | ½ 2-Year (cfs) | 10-Year (cfs) | 25-Year (cfs) | |
| Pre-Developed | Native | - | 21,340 | 0.01 | 0.08 | 0.11 | 74 |
| Dev. Basin | Roof/Road/ Landscape | 18,960 | 2,380 | 0.01 | 0.08 | 0.11 | 98/74[1] |

[1] The first curve number listed is for the impervious area in the basin (98), then for the pervious area (74)
[2] The ROW (Right of Way) sidewalk and driveway areas will address treatment with a Fee-in-Lieu and detention by overdetaining.

## Hydrologic Analysis

The hydrological analysis as previously mentioned was completed using HydroCAD Modeling Software, utilizing the SBUH method, and a Type IA 24-hour rainfall distribution. A list of the predeveloped peak flows for the design storm events are found in Table C-3. Refer to Appendix III for hydrographs for each predeveloped and developed storm event.

## Flow Control System Design

Based on the flow control requirements described in Section A, the flow control structure was sized to detain the developed storm events and release the stored runoff at predeveloped rates. Refer to the drawings in Appendix II for more details on detention and flow-control design. A summary of the stormwater detention requirements is listed below:

- Capture half the 2-yr developed runoff and infiltrate releasing zero flow.
- Capture the 2-yr developed runoff to be released at a rate equal to or less than the 2-yr peak predeveloped rate.
- Capture the 10-yr developed runoff to be released at a rate equal to or less than the 10-yr peak predeveloped rate.
- Capture the 25-yr developed runoff to be released at a rate equal to or less than the 25-yr peak predeveloped rate.

A combination of 300 feet of 36-inch underground detention pipes in combination with a flow control manhole was designed to control stormwater runoff from the overall developed site to meet the stormwater release and detention requirements above. A weir opening in the top of the flow control manhole provides overflow protection for storms exceeding the 25-year event. See Table C-4 for a summary of orifice sizing and developed release rates.

Table C-4 | Summary of Flow Control

| Storm Event | Orifice Size (in) | Orifice Elevation (ft) | Peak WSE[1] (ft) | Developed Release Rate (cfs) | Pre-Developed Release Rate (cfs) | Overflow Elevation (ft) |
|---|---|---|---|---|---|---|
| *Developed* | | | | | | |
| Half 2-Year | 0.7 | 192.22 | 193.41 | 0.01 | 0.01 | 195.1 |
| 10-Year | 1.5 | 193.42 | 194.68 | 0.08 | 0.08 | 195.1 |
| 25-Year[2] | 2.5 | 194.97 | 195.06 | 0.11 | 0.11 | 195.1 |

[1] WSE = Water Surface Elevation

[2] Overflow provided by a wier opening in the Flow Control Manhole.

Evaluation of the pre-developed and post-developed release rates in Table C-4 confirms that the stormwater design is in conformance with the design standards. Refer to Appendix III for the HydroCAD Analysis.

## Section D. Water Quality Design

The proprietary treatment was sized per section 4.08.5 in the CWS standards.

WQ Manhole:
An OldCastle PerkFilter manhole is proposed to treat the stormwater runoff from the developed basin. The water quality flow for this basin was determined by using the Water Quality Flow (WQF) equation outlined in section 4.08.5 of the CWS Standards (shown below).

$$Water\ Quality\ Flow\ (cfs) = \frac{0.36\ (in.)\ x\ Area\ (sq.ft.)}{12\left(\frac{in}{ft}\right)(4\ hr)\left(60\frac{min}{hr}\right)\left(60\frac{sec}{min}\right)}$$

The contributing basin area consists of 18,960 square feet of impervious surface. When placed into the WQF equation, this results in a WQF of 0.0395 cfs. The proposed OldCastle PerkFilter manhole with 2, 18" cartridges has a treatment capacity of 0.045 cfs, thus, treating the water quality storm runoff produced by the developed basin.

## Section E. Storm Drain System Operation & Maintenance

All facilities constructed as a part of this project will be owned, operated, and maintained by Sunny Singh. Sunny Singh proposes to maintain the treatment structures in accordance with the Operation and Maintenance Manuals included in Appendix IV.

APPENDIX I

# Environmental Watershed Data

# RECEIVING WATERS TMDL STATUS

# Oregon Dept. of Environmental Quality

**DEQ WQ Standards & Assessment Tool**

Search... Sign in

Navigation | Tools

Tool Labels

Bookmarks | Initial View | Zoom In | Zoom Out | Pan | Previous Extent | Next Extent

## Layers

Filter Layers... Filter

- 2022 Integrated Report
  - Monitoring Stations
  - Impaired Waters
  - Assessment Unit Status
  - Delistings
  - Assessment Units
- Water Quality Standards
- 2018/2020 Integrated Report
- 2012 Impaired Waters
- DEQ Water Quality Facilities
- Hydrography
  - DEQ Hydrography (LLID)
  - National Hydrography Dataset (NHD)
  - Watershed Boundary Dataset
- OWRD Administrative Boundaries

I want to...

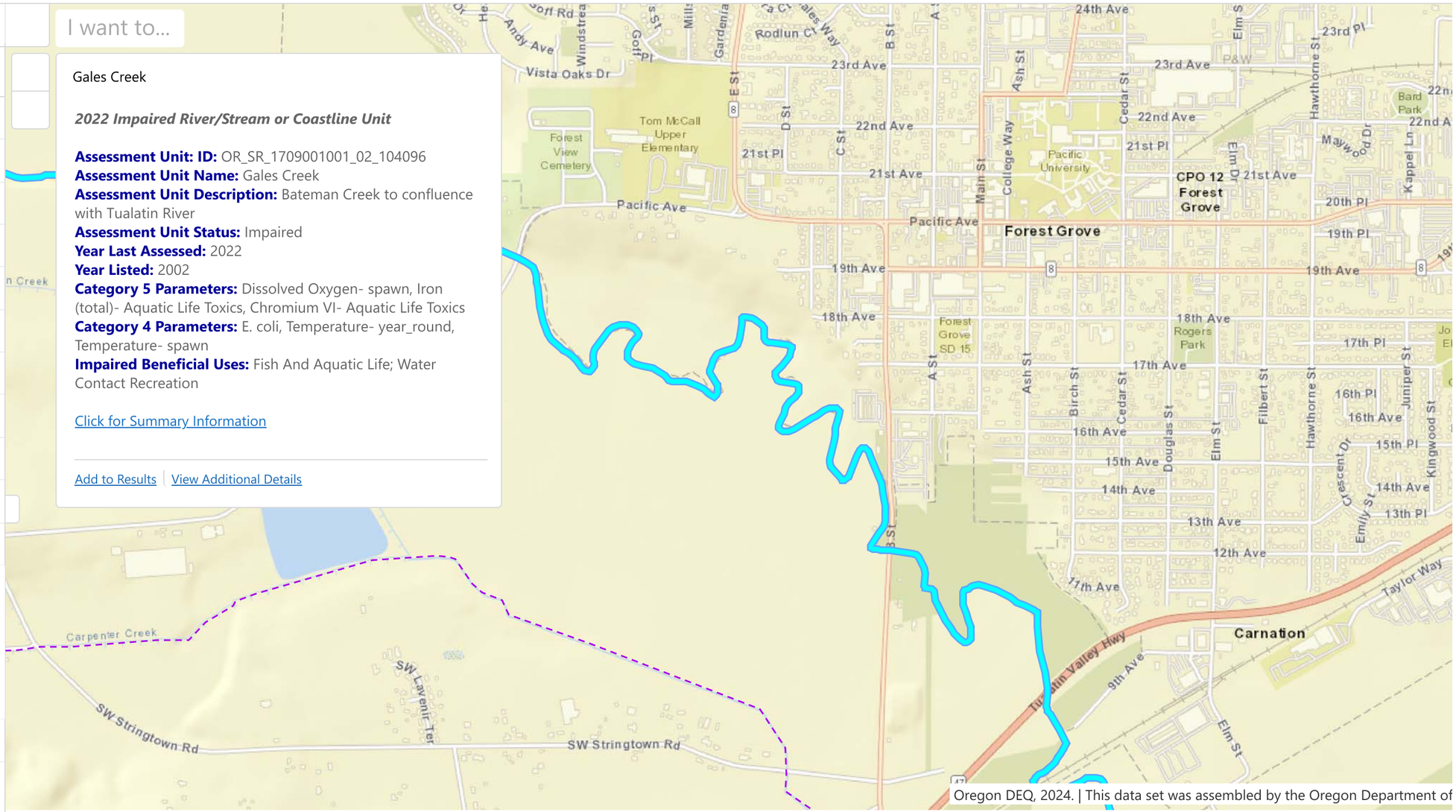
Gales Creek

***2022 Impaired River/Stream or Coastline Unit***

**Assessment Unit: ID:** OR_SR_1709001001_02_104096
**Assessment Unit Name:** Gales Creek
**Assessment Unit Description:** Bateman Creek to confluence with Tualatin River
**Assessment Unit Status:** Impaired
**Year Last Assessed:** 2022
**Year Listed:** 2002
**Category 5 Parameters:** Dissolved Oxygen- spawn, Iron (total)- Aquatic Life Toxics, Chromium VI- Aquatic Life Toxics
**Category 4 Parameters:** E. coli, Temperature- year_round, Temperature- spawn
**Impaired Beneficial Uses:** Fish And Aquatic Life; Water Contact Recreation

Click for Summary Information

Add to Results | View Additional Details




Layers | World St... | 0 0.1 0.2mi

# KNOWN NEARBY NPDES PERMITS

**Status of Permit Application - Search**

View the status of current DEQ permit applications.
*Note:* at the present time, only Water Quality permit applications can be viewed.

**Department of Environmental Quality (http://www.oregon.gov/DEQ/)**

Programs and Projects | Regulations | Data and Reports | Permits | Get Involved | About Us

To view the status of a permit application, enter the facility/file number below and press the "Search" button:

Search by Facility/File #

Facility/File #:

Search | Clear

Or, if you don't know the facility number, enter one or more of the available search options below and press the "Search" button:

Search by Facility Name and/or Address

Facility Name:

Facility Street:

Facility City: Forest Grove

Facility Zip Code:

Search | Clear

# Department of Environmental Quality (http://www.oregon.gov/DEQ/)

| | |
|---|---|
| Facility #: 104469<br>Ackley Brands Ltd (aka. Montinore Estates)<br>3663 SW Dilley Rd<br>Forest Grove, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=104469) |
| Facility #: 90745<br>CLEAN WATER SERVICES (aka. FOREST GROVE STP)<br>1345 SW FERN HILL RD<br>FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=90745) |
| Facility #: 122152<br>CLEAN WATER SERVICES (aka. FERN HILL WETLANDS PROJECT)<br>1345 FERN HILL ROAD<br>FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=122152) |

| | |
|---|---|
| Facility #: 104527<br>David Hill Winery and Vineyard (aka. David Hill Winery and Vineyard)<br>46350 NW DAVID HILL ROAD<br>FOREST GROVE,<br>OR 971116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=104527) |
| Facility #: 109791<br>FARMINGTON MOBILE CRUSHING, LLC (aka. PARKIN QUARRY)<br>ROUTE 1, BOX 244B<br>FOREST GROVE,<br>OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=109791) |

| | |
|---|---|
| Facility #: 127041 Fernhill Apartments, LLC (aka. Reserve at Fernhill Apartments) POPLAR ST AND 19TH AVE FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=127041) |
| Facility #: 116572 Forest Grove School District (aka. Forest Grove School District Bus Facility) 2701 TAYLOR WAY FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=116572) |

| | |
|---|---|
| Facility #: 111018<br>GALES CREEK CAMP FOUNDATION FOR CHILDREN WITH DIABETES (aka. GALES CREEK CAMP)<br>59425 NW CEDAR BROOK LANE<br>FOREST GROVE,<br>OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=111018) |
| Facility #: 125808<br>Gales Creek Development, LLC (aka. Gales Creek Terrace)<br>19TH AVENUE AND D STREET<br>FOREST GROVE,<br>OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=125808) |

| | |
|---|---|
| Facility #: 124523<br>Green Grove Cohousing Community, A Condominium Owner's Assoc (aka. Green Grove Cohousing HOA)<br>3900 Coho Cir<br>Forest Grove, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=124523) |
| Facility #: 125821<br>Jacob & Nicole Duyck (aka. Duyck Grading Permit)<br>9261 NW KANSAS CITY ROAD<br>FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=125821) |
| Facility #: 107618<br>LINEAGE LOGISTICS HCS, LLC (aka. LINEAGE )<br>4124 24TH AVE<br>FOREST GROVE, OR 97116-2256 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=107618) |

| | |
|---|---|
| Facility #: 126670<br>MGC Pure Chemicals America, Inc. (aka. MPCA)<br>701 ELM ST<br>FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=126670) |
| Facility #: 29912<br>NEW SEASON FOODS, INC. (aka. NEW SEASON FOODS, INC.)<br>2329 YEW STREET<br>FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=29912) |
| Facility #: 119734<br>PACIFIC AIR SWITCH CORP (aka. PASCOR)<br>2615 23RD AVENUE<br>FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=119734) |

| | |
|---|---|
| Facility #: 127361 Venture Properties, Inc. (aka. Farmstead Crossing) NORTH OF SILVERSTON DRIVE AND DAVID HILL FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=127361) |
| Facility #: 125739 Visitation of the Blessed Virgin Mary Catholic Church (aka. Visitation School Replacement) 4247 NW VISITATION ROAD FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=125739) |

| | |
|---|---|
| Facility #: 124945<br>W. Pendarvis Global Land and Carbon Credit Development, LLC (aka. Old Trapper Expansion)<br>4115 24TH AVENUE<br>FOREST GROVE,<br>OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=124945) |
| Facility #: 111161<br>WASTE MANAGEMENT OF OREGON, INC. (aka. FOREST GROVE TRANSFER STATION)<br>1525 B ST<br>FOREST GROVE,<br>OR 97116-2752 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=111161) |

| | |
|---|---|
| Facility #: 101997 WESTAK OF OREGON, INC. (aka. WESTAK OF OREGON) 3941 24TH AVE FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=101997) |
| Facility #: 125171 Westside Redi-Mix and Rock, Inc. (aka. Westside Rock) 451 ELM STREET FOREST GROVE, OR 97116 | View Permit(s) (StatusOfPermitApplicationResults.aspx?facilityID=125171) |

If you would like to contact DEQ regarding a permit application, please contact your local DEQ office (http://www.deq.state.or.us/about/locations.htm).

**Department of Environmental Quality (http://www.oregon.gov/DEQ/)**

Programs and Projects Regulations Data and Reports Permits Get Involved About Us

This website application cannot be made compliant with the Americans with Disabilities Act. We apologize for any inconvenience and invite you to contact DEQ at 800-452-4011 or email deqinfo@deq.oregon.gov for assistance in accessing this site

**Department of Environmental Quality (http://www.oregon.gov/DEQ/)**

700 NE Multnomah Street, Suite 600 Portland, OR 97232

Hours: Mon-Fri, 8 a.m.-5 p.m

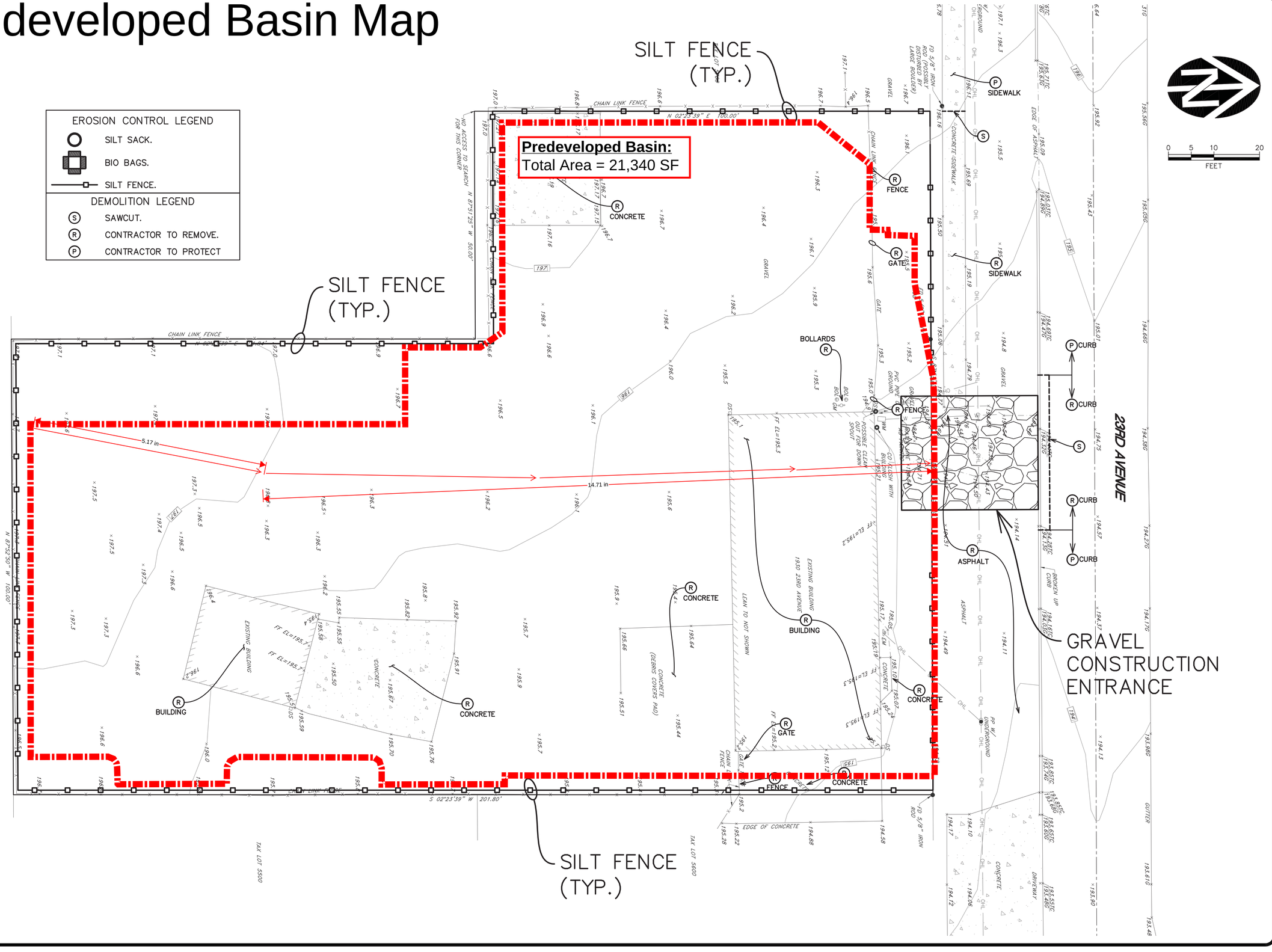
Email: DEQInfo@deq.oregon.gov (mailto:DEQInfo@deq.oregon.gov) | Phone: 503-229-5696 | Fax: 503-229-6124

APPENDIX II

# Drainage Basin Maps

# PREDEVELOPED BASIN MAP

# Predeveloped Basin Map




| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |
| 1 | | | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 1"
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026
REVIEW


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

EXISTING CONDITIONS, EROSION CONTROL, AND DEMOLITION PLAN

DRAWING
C1.0

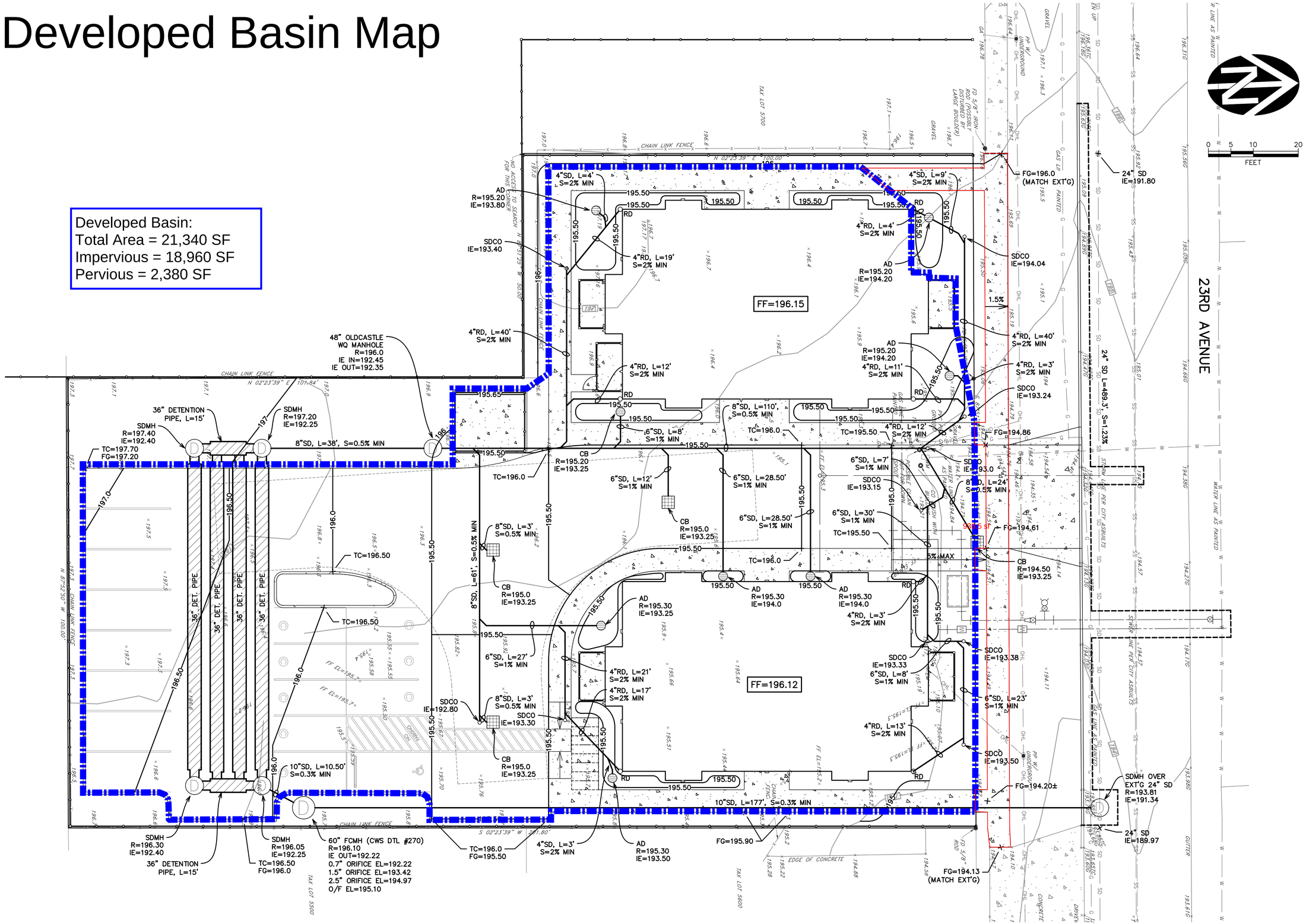
JOB NUMBER
3547.0000.0

12/12/2024 1:49:14 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\EC EC Demo Plan.dwg, (C1.0 tab)

# DEVELOPED BASIN MAP

# Developed Basin Map

Developed Basin:
Total Area = 21,340 SF
Impervious = 18,960 SF
Pervious = 2,380 SF




| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | | REVISIONS | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026
REVIEW


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# GRADING AND DRAINAGE PLAN

DRAWING
C2.0

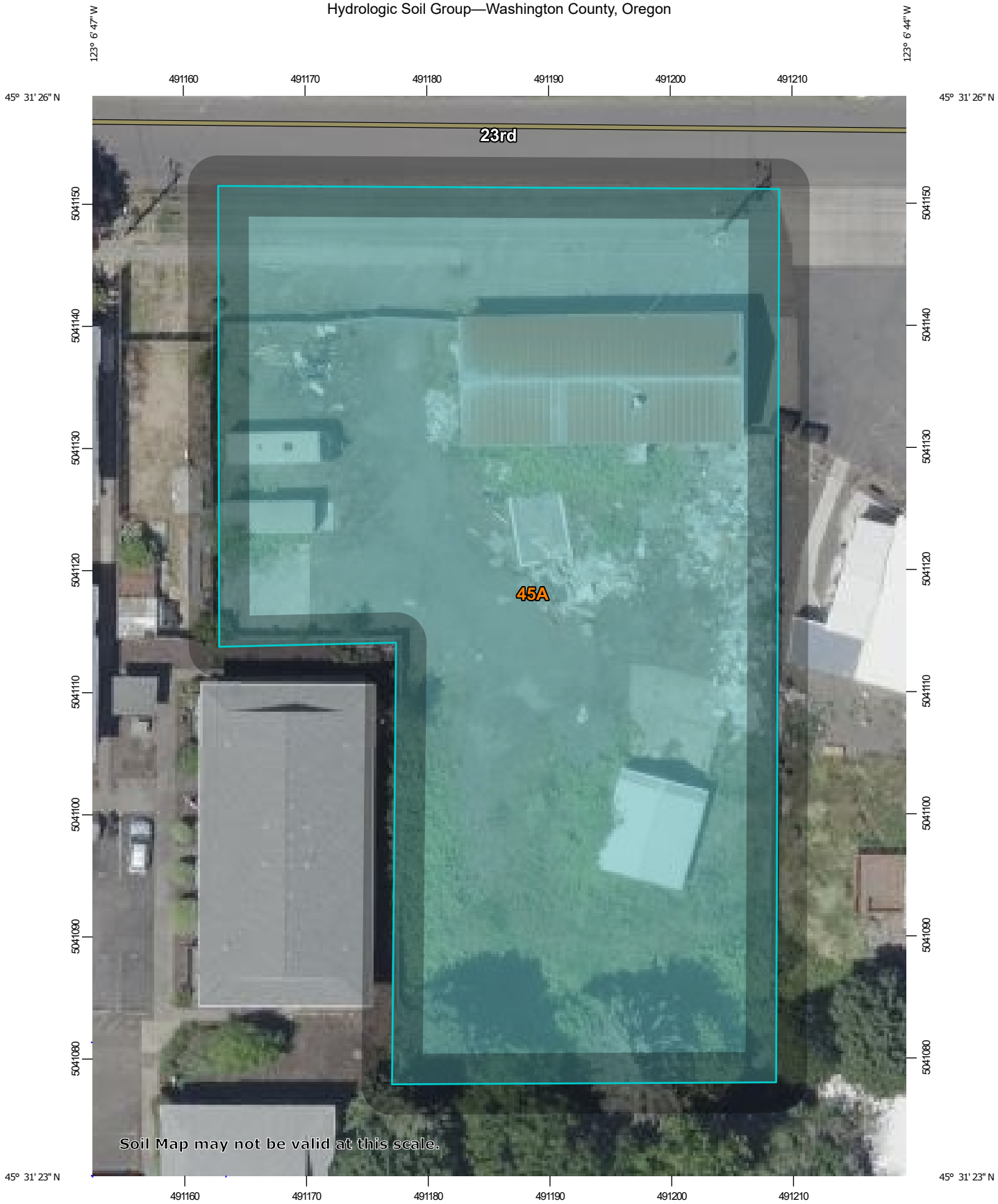
JOB NUMBER
3547.0000.0

3/10/2025 3:36:40 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Grading and Drainage Plan.dwg, (C2.0 tab)

APPENDIX III

# Basin Hydrologic Characteristics

# SOIL MAPS WITH HYDROLOGIC SOIL GROUP




Map Scale: 1:431 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

A

A/D

B

B/D

C

C/D

D

Not rated or not available

**Soil Rating Lines**

A

A/D

B

B/D

C

C/D

D

Not rated or not available

**Soil Rating Points**

A

A/D

B

B/D

C

C/D

D

Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Oregon
Survey Area Data: Version 24, Aug 28, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 45A | Woodburn silt loam, 0 to 3 percent slopes | C | 0.7 | 100.0% |
| **Totals for Area of Interest** | | | **0.7** | **100.0%** |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher

# HYDROCAD ANALYSIS

## Summary for Subcatchment 1S: Pre-Development

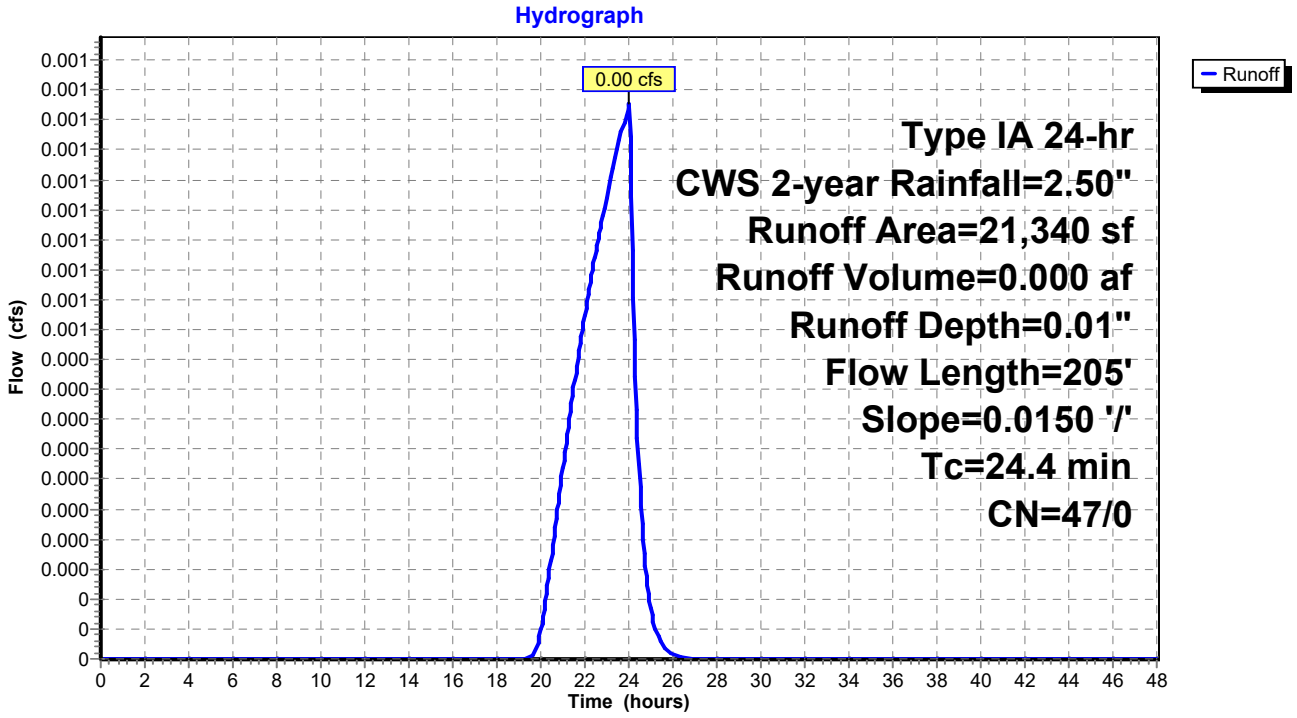
Runoff = 0.00 cfs @ 23.98 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr CWS 2-year Rainfall=2.50"

| Area (sf) | CN | Description |
|---|---|---|
| 21,340 | 47 | Sagebrush range, Good, HSG C |
| 21,340 | 47 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 24.4 | 205 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.50" |

## Subcatchment 1S: Pre-Development



## Summary for Subcatchment 1S: Pre-Development

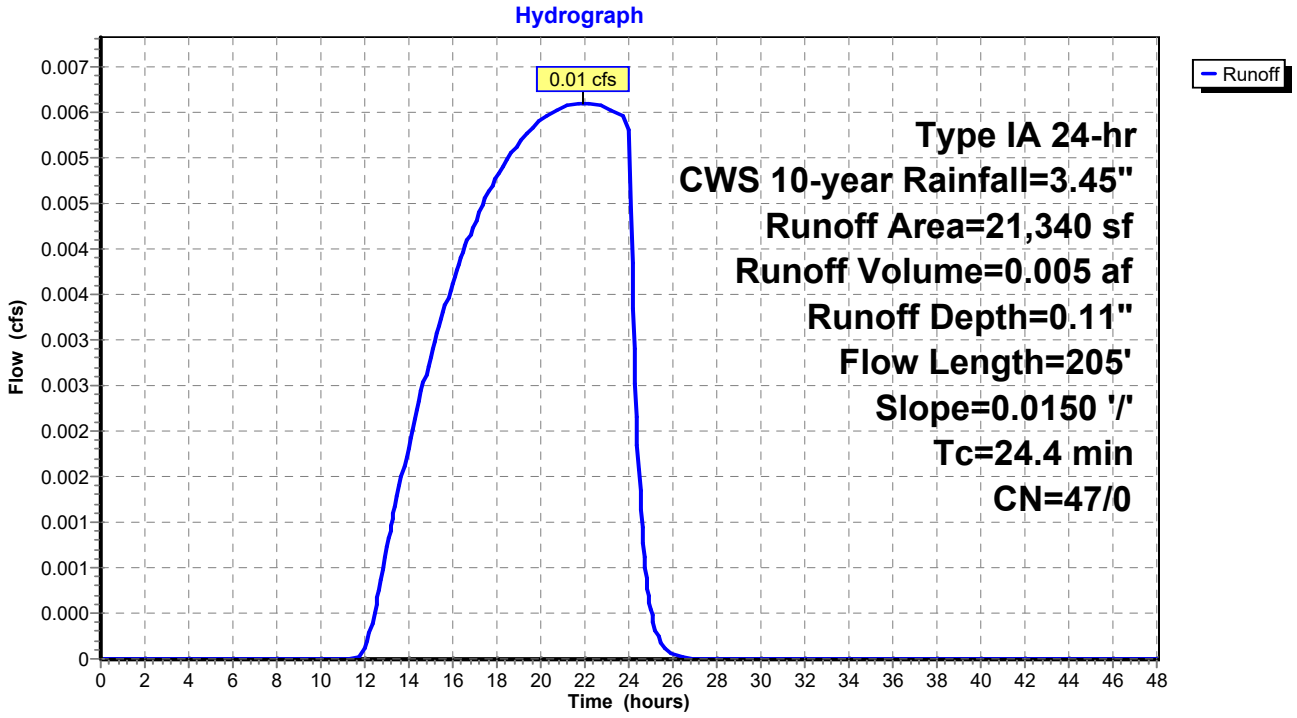
Runoff = 0.01 cfs @ 21.95 hrs, Volume= 0.005 af, Depth= 0.11"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr CWS 10-year Rainfall=3.45"

| Area (sf) | CN | Description |
|---|---|---|
| 21,340 | 47 | Sagebrush range, Good, HSG C |
| 21,340 | 47 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 24.4 | 205 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.50" |

## Subcatchment 1S: Pre-Development



## Summary for Subcatchment 1S: Pre-Development

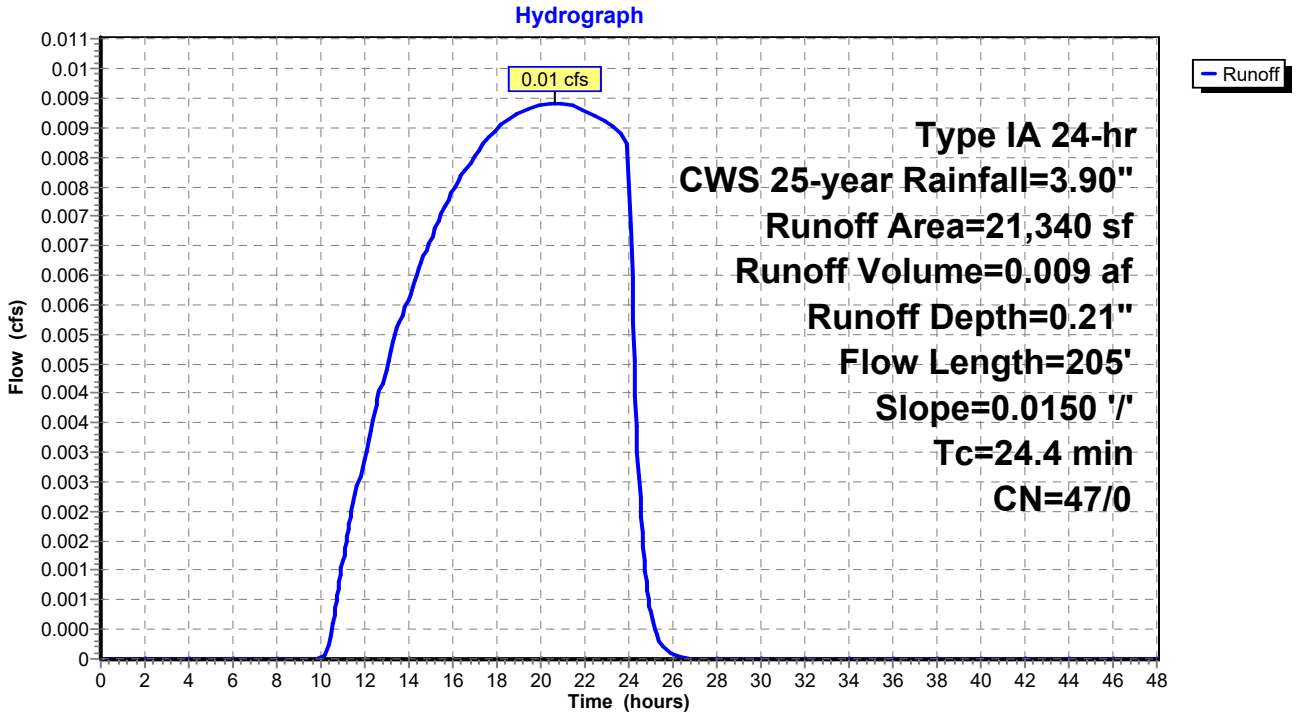
Runoff = 0.01 cfs @ 20.59 hrs, Volume= 0.009 af, Depth= 0.21"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr CWS 25-year Rainfall=3.90"

| Area (sf) | CN | Description |
|---|---|---|
| 21,340 | 47 | Sagebrush range, Good, HSG C |
| 21,340 | 47 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 24.4 | 205 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.50" |

## Subcatchment 1S: Pre-Development



## Summary for Subcatchment 2S: Post-Development

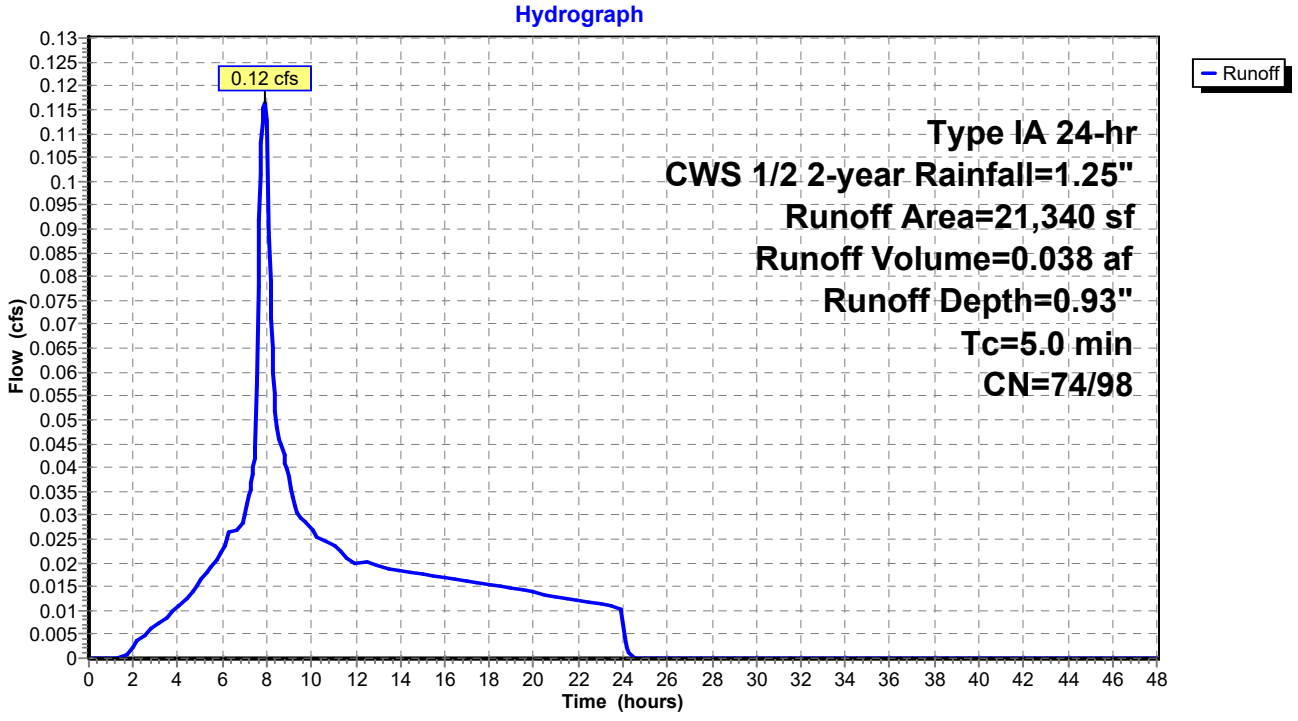
Runoff = 0.12 cfs @ 7.91 hrs, Volume= 0.038 af, Depth= 0.93"
Routed to Pond 3P : Underground Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr CWS 1/2 2-year Rainfall=1.25"

| Area (sf) | CN | Description |
|---|---|---|
| 18,960 | 98 | Paved parking, HSG C |
| 2,380 | 74 | >75% Grass cover, Good, HSG C |
| 21,340 | 95 | Weighted Average |
| 2,380 | 74 | 11.15% Pervious Area |
| 18,960 | 98 | 88.85% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 5.0 | | | | | **Direct Entry,** |

## Subcatchment 2S: Post-Development



## Summary for Subcatchment 2S: Post-Development

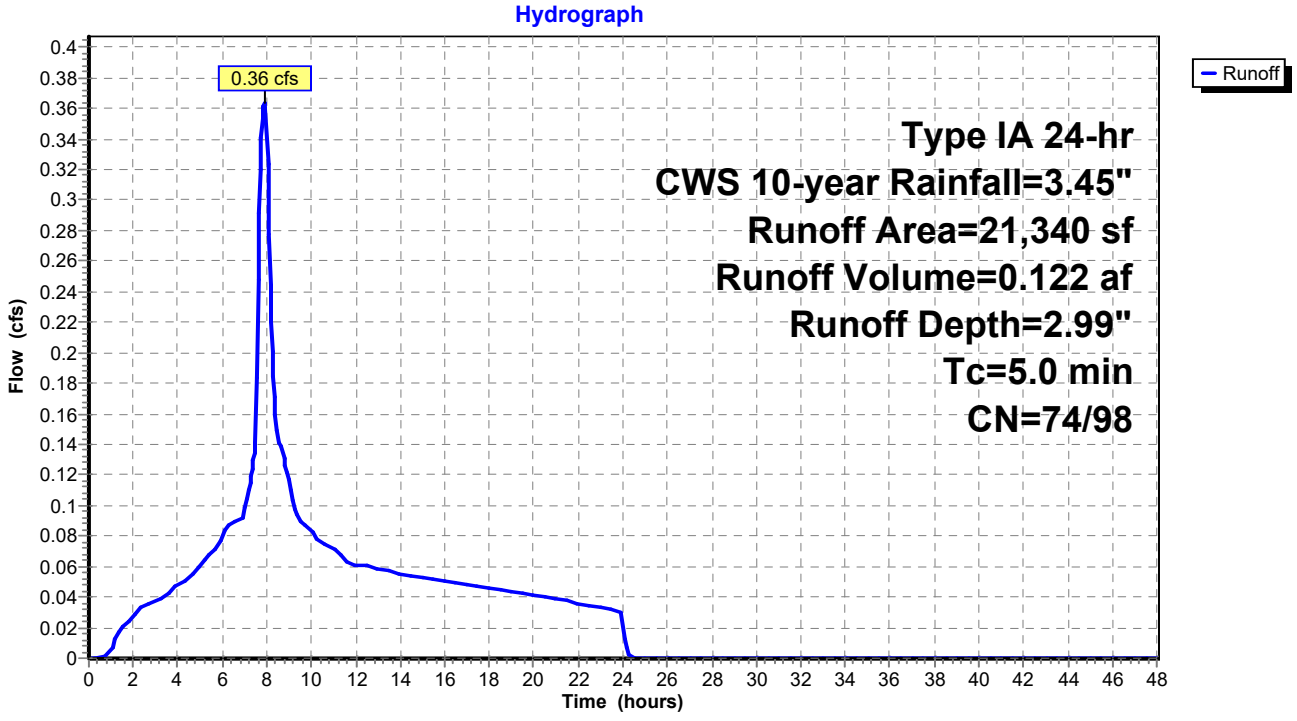
Runoff = 0.36 cfs @ 7.90 hrs, Volume= 0.122 af, Depth= 2.99"
Routed to Pond 3P : Underground Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr CWS 10-year Rainfall=3.45"

| Area (sf) | CN | Description |
|---|---|---|
| 18,960 | 98 | Paved parking, HSG C |
| 2,380 | 74 | >75% Grass cover, Good, HSG C |
| 21,340 | 95 | Weighted Average |
| 2,380 | 74 | 11.15% Pervious Area |
| 18,960 | 98 | 88.85% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 5.0 | | | | | **Direct Entry,** |

## Subcatchment 2S: Post-Development



## Summary for Subcatchment 2S: Post-Development

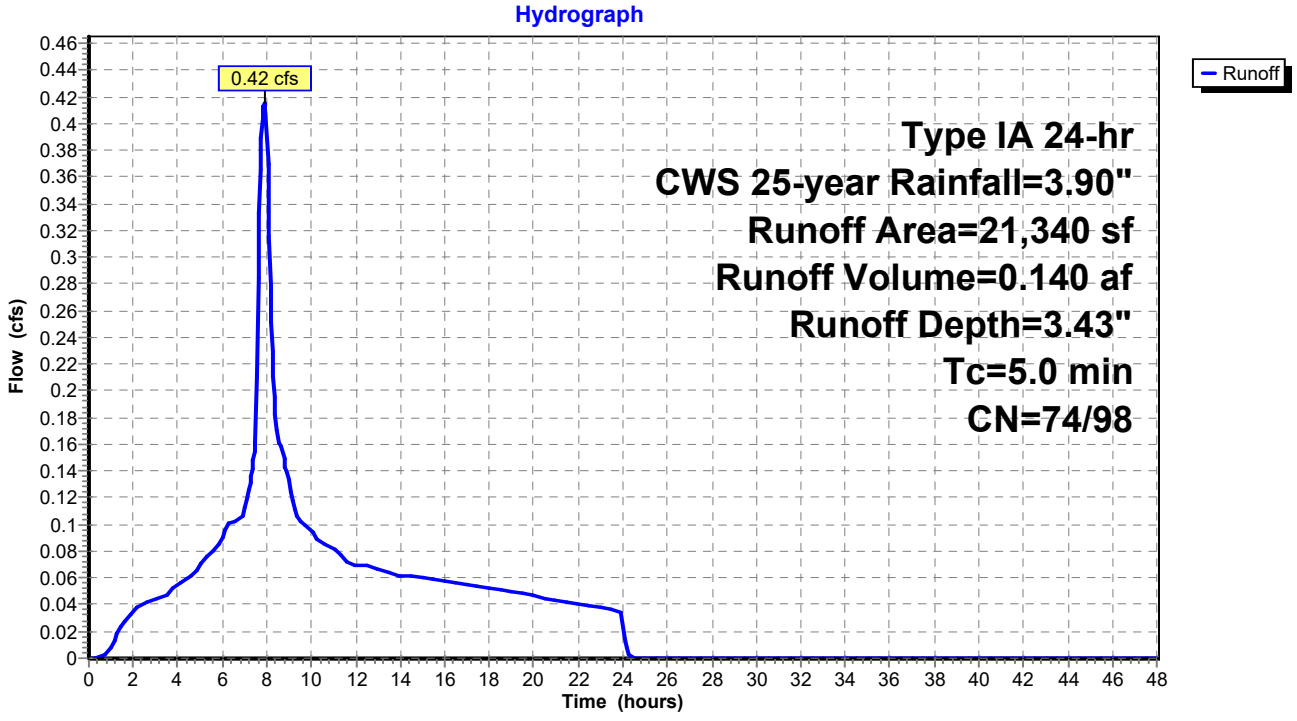
Runoff = 0.42 cfs @ 7.90 hrs, Volume= 0.140 af, Depth= 3.43"
Routed to Pond 3P : Underground Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr CWS 25-year Rainfall=3.90"

| Area (sf) | CN | Description |
|---|---|---|
| 18,960 | 98 | Paved parking, HSG C |
| 2,380 | 74 | >75% Grass cover, Good, HSG C |
| 21,340 | 95 | Weighted Average |
| 2,380 | 74 | 11.15% Pervious Area |
| 18,960 | 98 | 88.85% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 5.0 | | | | | **Direct Entry,** |

## Subcatchment 2S: Post-Development



## Summary for Pond 3P: Underground Detention

Inflow Area = 0.490 ac, 88.85% Impervious, Inflow Depth = 0.93" for CWS 1/2 2-year event
Inflow = 0.12 cfs @ 7.91 hrs, Volume= 0.038 af
Outflow = 0.01 cfs @ 19.65 hrs, Volume= 0.038 af, Atten= 88%, Lag= 704.4 min
Primary = 0.01 cfs @ 19.65 hrs, Volume= 0.038 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 193.41' @ 19.65 hrs Surf.Area= 0.020 ac Storage= 0.017 af

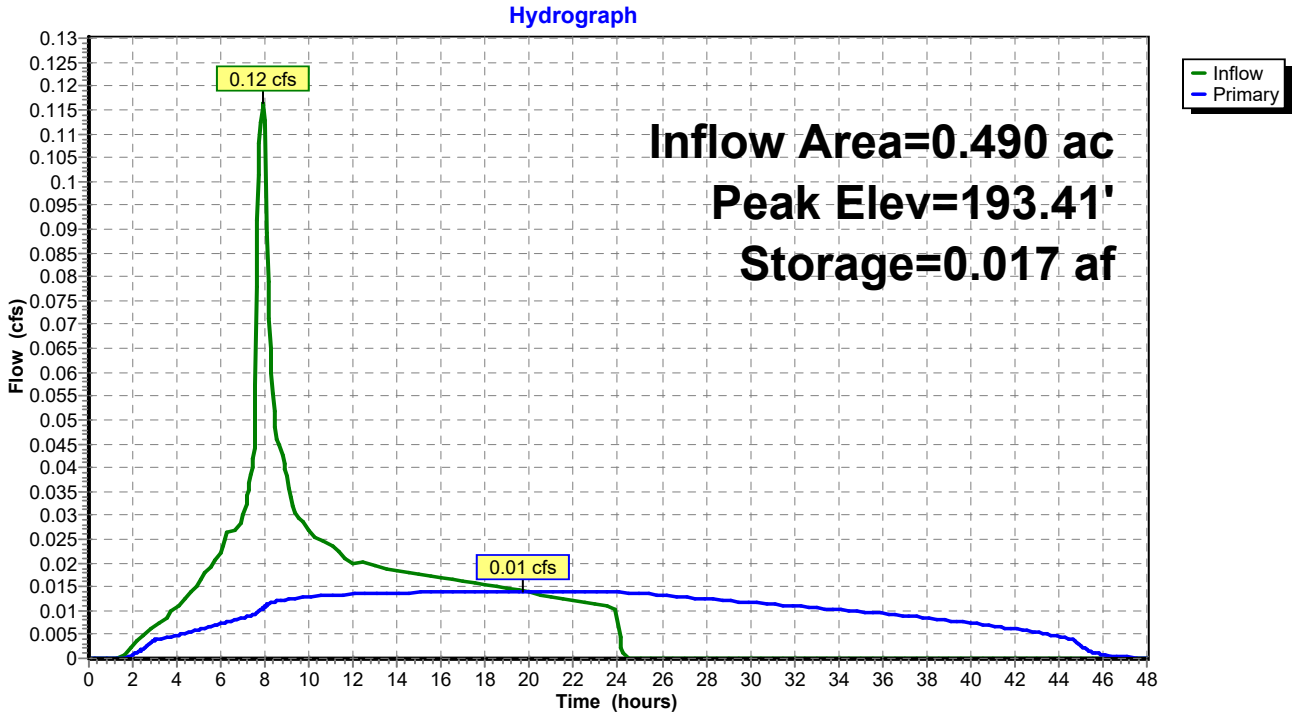
Plug-Flow detention time= 663.2 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 663.1 min ( 1,368.5 - 705.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 192.22' | 0.049 af | **36.0" Round Pipe Storage** x 4<br>L= 75.0' S= 0.0010 '/' |
| #2 | 192.22' | 0.002 af | **3.00'D x 10.00'H Vertical Cone/Cylinder** |
| | | 0.050 af | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 192.22' | **0.7" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads |
| #2 | Primary | 193.42' | **1.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads |
| #3 | Primary | 194.97' | **2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads |

**Primary OutFlow** Max=0.01 cfs @ 19.65 hrs HW=193.41' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 5.25 fps)
- **2=Orifice/Grate** ( Controls 0.00 cfs)
- **3=Orifice/Grate** ( Controls 0.00 cfs)

## Pond 3P: Underground Detention



## Summary for Pond 3P: Underground Detention

Inflow Area = 0.490 ac, 88.85% Impervious, Inflow Depth = 2.99" for CWS 10-year event
Inflow = 0.36 cfs @ 7.90 hrs, Volume= 0.122 af
Outflow = 0.08 cfs @ 9.90 hrs, Volume= 0.122 af, Atten= 77%, Lag= 119.6 min
Primary = 0.08 cfs @ 9.90 hrs, Volume= 0.122 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 194.68' @ 9.90 hrs Surf.Area= 0.016 ac Storage= 0.043 af

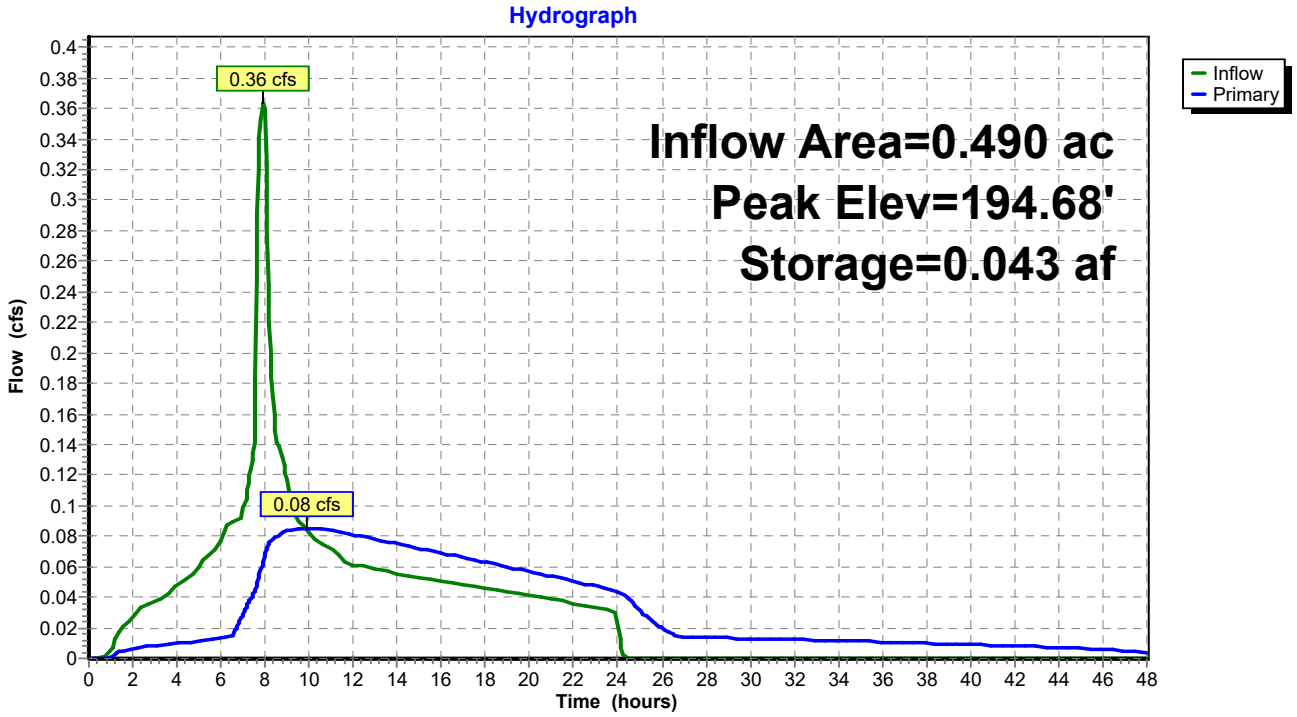
Plug-Flow detention time= 403.0 min calculated for 0.122 af (100% of inflow)
Center-of-Mass det. time= 402.4 min ( 1,075.4 - 672.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 192.22' | 0.049 af | **36.0" Round Pipe Storage** x 4<br>L= 75.0' S= 0.0010 '/' |
| #2 | 192.22' | 0.002 af | **3.00'D x 10.00'H Vertical Cone/Cylinder** |
| | | 0.050 af | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 192.22' | **0.7" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads |
| #2 | Primary | 193.42' | **1.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads |
| #3 | Primary | 194.97' | **2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads |

**Primary OutFlow** Max=0.08 cfs @ 9.90 hrs HW=194.68' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 7.56 fps)
- **2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 5.28 fps)
- **3=Orifice/Grate** ( Controls 0.00 cfs)

## Pond 3P: Underground Detention



## Summary for Pond 3P: Underground Detention

Inflow Area = 0.490 ac, 88.85% Impervious, Inflow Depth = 3.43" for CWS 25-year event
Inflow = 0.42 cfs @ 7.90 hrs, Volume= 0.140 af
Outflow = 0.11 cfs @ 9.25 hrs, Volume= 0.139 af, Atten= 73%, Lag= 81.0 min
Primary = 0.11 cfs @ 9.25 hrs, Volume= 0.139 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 195.06' @ 9.25 hrs Surf.Area= 0.010 ac Storage= 0.048 af

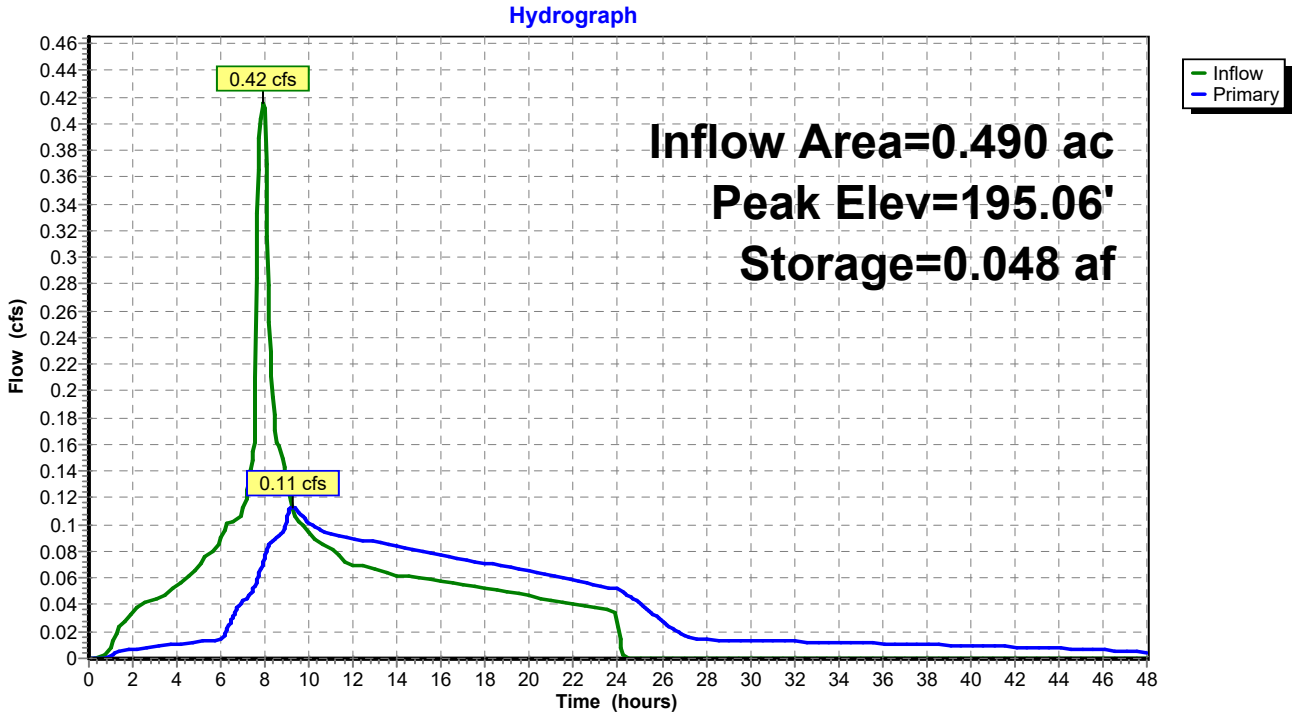
Plug-Flow detention time= 392.8 min calculated for 0.139 af (100% of inflow)
Center-of-Mass det. time= 390.1 min ( 1,060.2 - 670.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 192.22' | 0.049 af | **36.0" Round Pipe Storage** x 4<br>L= 75.0' S= 0.0010 '/' |
| #2 | 192.22' | 0.002 af | **3.00'D x 10.00'H Vertical Cone/Cylinder** |
| | | 0.050 af | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 192.22' | **0.7" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads |
| #2 | Primary | 193.42' | **1.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads |
| #3 | Primary | 194.97' | **2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads |

**Primary OutFlow** Max=0.11 cfs @ 9.25 hrs HW=195.06' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 8.12 fps)
- **2=Orifice/Grate** (Orifice Controls 0.07 cfs @ 6.05 fps)
- **3=Orifice/Grate** (Orifice Controls 0.01 cfs @ 1.03 fps)

## Pond 3P: Underground Detention



# DESIGN STORMS

TABLE 4-4

| Recurrence Interval | Total 24-Hour Precipitation Depth (water equivalent inches) |
|---|---|
| 2-year | 2.5 |
| 5-year | 3.10 |
| 10-year | 3.45 |
| 25-year | 3.90 |

4.08.3 Infiltration-based Design

a. For purposes of sizing infiltration-based facilities, the following apply:

1. Soil data should be obtained from either:

A) Soil series data as mapped on the NRCS WebSoil Survey . The more common soil series within the District, and key data for design purposes, are listed in Table 4-5.

B) Onsite infiltration tests at multiple locations (1 per ¼ acre or 1 per 2 proposed infiltration-based facilities, as needed to support facility design), performed at the depth of the base of the infiltration facility.

2. Where required, infiltration testing of native soil shall use either open pit or encased falling head infiltration methods, or a double-ring infiltrometer. For medium and large projects, these tests must be performed by a qualified civil engineer (PE) or certified engineering geologist (CEG). A factor of safety of 2 shall be used.

3. The following conditions will be assumed to preclude infiltration, and will require appropriate documentation of site conditions:

A) "High" or "very high" landslide susceptibility. (Note: areas with moderate landslide susceptibility require dispersed infiltration unless accompanied by a geotechnical report describing conditions under which infiltration can be safely implemented.)

B) Depth to seasonal high groundwater, persistent restrictive layer, or competent bedrock < 36 inches below ground surface.

C) Presence of subsurface contamination, such as would be documented in a "no further action" determination following site cleanup or listing as an active cleanup site by Oregon Department of Environmental Quality.

# GEOTECHNICAL REPORT

APPENDIX IV

# Operation & Maintenance Plans

# POLLUTION/FLOW CONTROL STRUCTURES

# PERKFILTER™

## Inspection and Maintenance Guide



Water

# PerkFilter™ Media Filtration System

## Description

The PerkFilter is a stormwater treatment device used to remove pollutants from urban runoff. Impervious surfaces and other urban and suburban landscapes generate a variety of contaminants that can enter stormwater and pollute downstream receiving waters. The PerkFilter is a media-filled cartridge filtration device designed to capture and retain sediment, gross solids, metals, nutrients, hydrocarbons, and trash and debris. As with any stormwater treatment system, the PerkFilter requires periodic maintenance to sustain optimum system performance.

## Function

The PerkFilter is a water quality treatment system consisting of three chambers: an inlet chamber, a filter cartridge treatment chamber, and an outlet chamber (Figure 1). Stormwater runoff enters the inlet chamber through an inlet pipe, curb opening, or grated inlet. Gross solids are settled out, and floating trash and debris are trapped in the inlet chamber. Pretreated flow is then directed to the treatment chamber through an opening in the baffle wall between the inlet chamber and treatment chamber. The treatment chamber contains media-filled filter cartridges (Figure 2) that use physical and chemical processes to remove pollutants. During a storm event, runoff pools in the treatment chamber before passing radially through the cylindrical cartridges from the outside surface, through the media for treatment, and into the center of the cartridge. At the center of the cartridge is a center tube assembly designed to distribute the hydraulic load evenly across the surface of the filter cartridge and control the treatment flow rate. The center tube assembly discharges treated flow through the false floor and into the outlet chamber. A draindown feature built into each cartridge allows the treatment chamber to dewater between storm events.

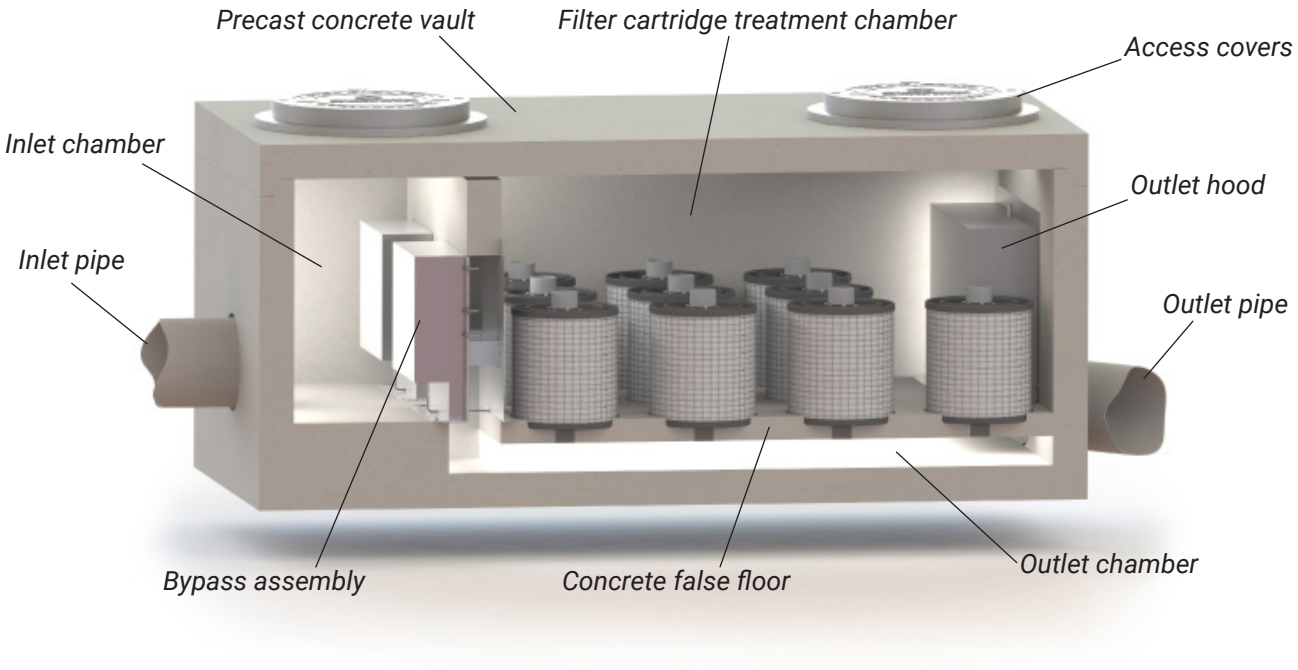



**Figure 1. Schematic of the PerkFilter system.**

All PerkFilter systems include a high-flow bypass assembly to divert flow exceeding the treatment capacity of the filter cartridges around the treatment chamber. The bypass assembly routes peak flow from the inlet chamber directly to the outlet chamber, bypassing the treatment chamber to prevent sediment and other captured pollutants from being scoured and re-entrained by high flow. Treated flow and bypass flow merge in the outlet chamber for discharge by a single outlet pipe.

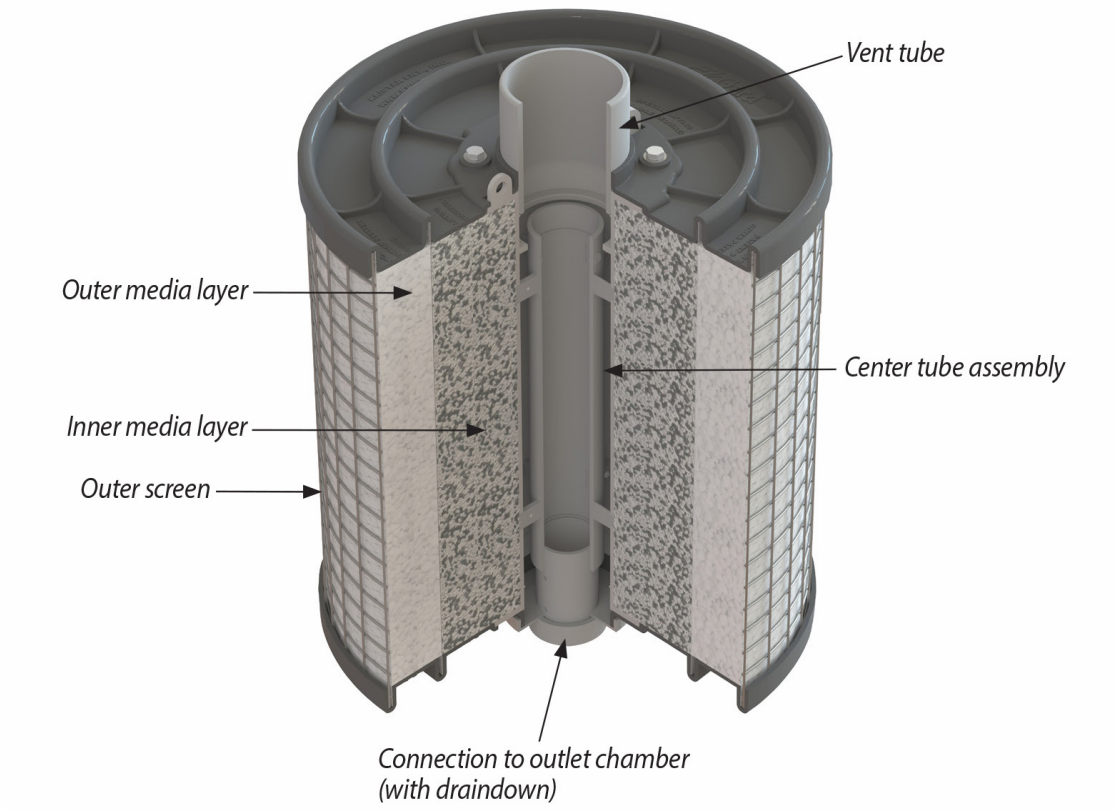



**Figure 2. Schematic of PerkFilter cartridge.**

## Configuration

The PerkFilter structure may consist of a vault, manhole, or catch basin configuration. Catch basin units may be fabricated from concrete or steel. Internal components including the PerkFilter cartridges are manufactured from durable plastic and stainless steel components and hardware. All cartridges are 18 inches in diameter and are available in two heights: 12-inch and 18-inch. Cartridges may be used alone or may be stacked (Figure 3) to provide 24-inch and 30-inch combinations. The capacity of each cartridge or cartridge combination is dictated by the allowable operating rate of the media and the outer surface area of the cartridge. Thus, taller cartridges have greater treatment capacity than shorter cartridges, but they also require more hydraulic drop across the system. Cartridges may be filled with a wide variety of media but the standard mix is composed of zeolite, perlite and carbon (ZPC).

Access to an installed PerkFilter system is typically provided by ductile iron castings or hatch covers. The location and number of access appurtenances is dependent on the size and configuration of the system.

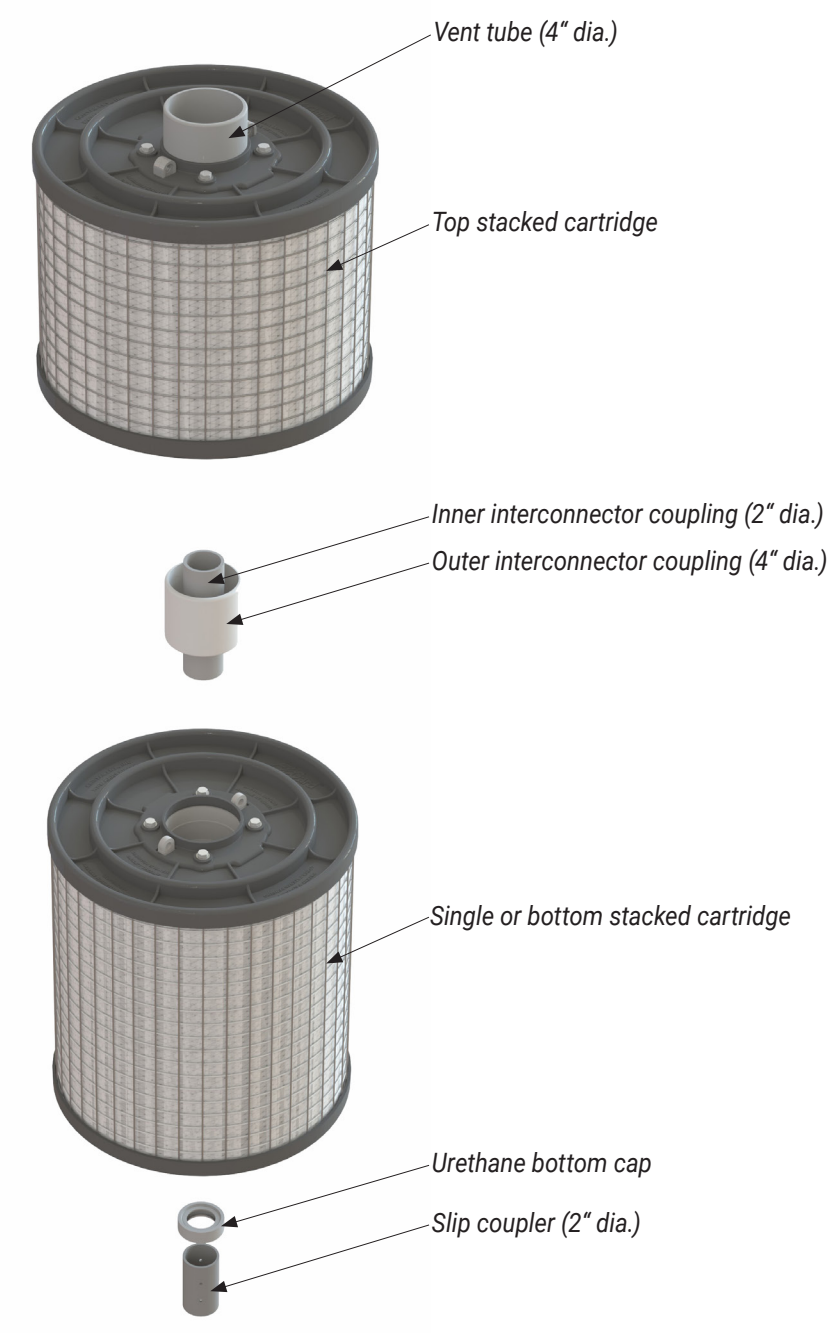



**Figure 3. Schematic of stacked cartridges and connector components.**

## Maintenance Overview

State and local regulations require all stormwater management systems to be inspected on a periodic basis and maintained as necessary to ensure performance and protect downstream receiving waters. Maintenance prevents excessive pollutant buildup that can limit system performance by reducing the operating capacity and increasing the potential for scouring of pollutants during periods of high flow.

## Inspection and Maintenance Frequency

The PerkFilter should be inspected on a periodic basis, typically twice per year, and maintained as required. Initially, inspections of a new system should be conducted more frequently to help establish an appropriate site-specific inspection frequency. The maintenance frequency will be driven by the amount of runoff and pollutant loading encountered by a given system. In most cases, the optimum maintenance interval will be one to three years. Inspection and maintenance activities should be performed only during dry weather periods.

## Inspection Equipment

The following equipment is helpful when conducting PerkFilter inspections:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Socket and wrench for bolt-down access covers
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Measuring stick or sludge sampler
- Long-handled net (optional)

## Inspection Procedures

PerkFilter inspections are visual and may be conducted from the ground surface without entering the unit. To complete an inspection, safety measures including traffic control should be deployed before the access covers are removed. Once the covers have been removed, the following items should be checked and recorded (see form provided at the end of this document) to determine whether maintenance is required:

- Inspect the internal components and note whether there are any broken or missing parts. In the unlikely event that internal parts are broken or missing, contact Oldcastle Infrastructure at (800) 579-8819 to determine appropriate corrective action.
- Note whether the inlet pipe is blocked or obstructed. The outlet pipe is covered by a removable outlet hood and cannot be observed without entering the unit.
- Observe, quantify and record the accumulation of floating trash and debris in the inlet chamber. The significance of accumulated floating trash and debris is a matter of judgment. A long-handled net may be used to retrieve the bulk of trash and debris at the time of inspection if full maintenance due to accumulation of floating oils or settled sediment is not yet warranted.

- Observe, quantify and record the accumulation of oils in the inlet chamber. The significance of accumulated floating oils is a matter of judgment. However, if there is evidence of an oil or fuel spill, immediate maintenance by appropriate certified personnel is warranted.
- Observe, quantify and record the average accumulation of sediment in the inlet chamber and treatment chamber. A calibrated dipstick, tape measure, or sludge sampler may be used to determine the amount of accumulated sediment in each chamber. The depth of sediment may be determined by calculating the difference between the measurement from the rim of the PerkFilter to the top of the accumulated sediment, and the measurement from the rim of the PerkFilter to the bottom of the PerkFilter structure. Finding the top of the accumulated sediment below standing water takes some practice and a light touch, but increased resistance as the measuring device is lowered toward the bottom of the unit indicates the top of the accumulated sediment.
- Finally, observe, quantify and record the amount of standing water in the treatment chamber around the cartridges. If standing water is present, do not include the depth of sediment that may have settled out below the standing water in the measurement.

## Maintenance Triggers

Maintenance should be scheduled if any of the following conditions are identified during the inspection:

- Internal components are broken or missing.
- Inlet piping is obstructed.
- The accumulation of floating trash and debris that cannot be retrieved with a net and/or oil in the inlet chamber is significant.
- There is more than 6” of accumulated sediment in the inlet chamber.
- There is more than 4” of accumulated sediment in the treatment chamber.
- There is more than 4” of standing water in the treatment chamber more than 24 hours after end of rain event.
- A hazardous material release (e.g. automotive fluids) is observed or reported.
- The system has not been maintained for 3 years (wet climates) to 5 years (dry climates).

## Maintenance Equipment

The following equipment is helpful when conducting PerkFilter maintenance:

- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Socket and wrench for bolt-down access covers
- Manhole hook or pry bar
- Confined space entry equipment, if needed
- Flashlight
- Tape measure
- 9/16” socket and wrench to remove hold-down struts and filter cartridge tops
- Replacement filter cartridges
- Vacuum truck with water supply and water jet

Contact Oldcastle Infrastructure at (800) 579-8819 for replacement filter cartridges. A lead time of four weeks is recommended.

## Maintenance Procedures

Maintenance should be conducted during dry weather when no flow is entering the system. Confined space entry is necessary to maintain vault and manhole PerkFilter configurations. Only personnel that are OSHA Confined Space Entry trained and certified may enter underground structures. Confined space entry is not required for catch basin PerkFilter configurations. Once safety measures such as traffic control are deployed, the access covers may be removed and the following activities may be conducted to complete maintenance:

- Remove floating trash, debris and oils from the water surface in the inlet chamber using the extension nozzle on the end of the boom hose of the vacuum truck. Continue using the vacuum truck to completely dewater the inlet chamber and evacuate all accumulated sediment from the inlet chamber. Some jetting may be required to fully remove sediment. The inlet chamber does not need to be refilled with water after maintenance is complete. The system will fill with water when the next storm event occurs.
- Remove the hold-down strut from each row of filter cartridges and then remove the top of each cartridge (the top is held on by four 9/16” bolts) and use the vacuum truck to evacuate the spent media. When empty, the spent cartridges may be easily lifted off their slip couplers and removed from the vault. The couplers may be left inserted into couplings cast into the false floor to prevent sediment and debris from being washed into the outlet chamber during washdown.
- Once all the spent cartridges have been removed from the structure, the vacuum truck may be used to evacuate all accumulated sediment from the treatment chamber. Some jetting may be required to fully remove sediment. Take care not to wash sediment and debris through the openings in the false floor and into the outlet chamber. All material removed from the PerkFilter during maintenance including the spent media must be disposed of in accordance with local, state, and/or federal regulations. In most cases, the material may be handled in the same manner as disposal of material removed from sumped catch basins or manholes.
- Place a fresh cartridge in each cartridge position using the existing slip couplers and urethane bottom caps. If the vault is equipped with stacked cartridges, the existing outer and inner interconnector couplers must be used between the stacked cartridges to provide hydraulic connection. Transfer the existing vent tubes from the spent cartridges to the fresh cartridges. Finally, refit the struts to hold the fresh cartridges in place.
- Securely replace access covers, as appropriate.
- Make arrangements to return the empty spent cartridges to Oldcastle Infrastructure.

# PerkFilter
# Inspection and Maintenance Log

Location_____

**Structure Configuration and Size:**

Inspection Date_____

☐ Vault _____feet x _____feet
☐ Manhole _____feet diameter
☐ Catch Basin _____feet x _____feet

**Number and Height of Cartridge Stacks:**

Count____each ☐12" ☐ 18" ☐ 24" ☐ 30"

**Media Type:**

☐ ZPC ☐ Perlite ☐ Other_____

| | |
|---|---|
| ***Condition of Internal Components***<br>☐ Good ☐ Damaged ☐ Missing | Notes: |
| ***Inlet or Outlet Blockage or Obstruction***<br>☐ Yes ☐ No | Notes: |
| ***Floating Trash and Debris***<br>☐ Significant ☐ Not Significant | Notes: |
| ***Floating Oils***<br>☐ Significant ☐ Not Significant ☐ Spill | Notes: |
| ***Sediment Depth in Inlet Chamber***<br>☐ Inches of Sediment:_____ | Notes: |
| ***Sediment Depth in Treatment Chamber***<br>☐ Inches of Sediment:_____ | Notes: |
| ***Standing Water in Treatment Chamber***<br>☐ Inches of Standing Water:_____ | Notes: |

***Maintenance Required***

☐ **Yes - Schedule Maintenance** ☐ **No - Inspect Again in _____ Months**

# PERKFILTER™

**OUR MARKETS**



**BUILDING STRUCTURES**



**COMMUNICATIONS**



**WATER**



**ENERGY**



**TRANSPORTATION**

APPENDIX V

# Detail Drawings/Specifications

# POLLUTION/FLOW CONTROL STRUCTURES

| SITE SPECIFIC DATA | |
|---|---|
| Structure ID | - |
| Treatment Flow Rate (gpm/cfs) | - |
| Peak Flow Rate (cfs) | - |
| Cartridge Quantity | - |
| Rim Elevation | - |

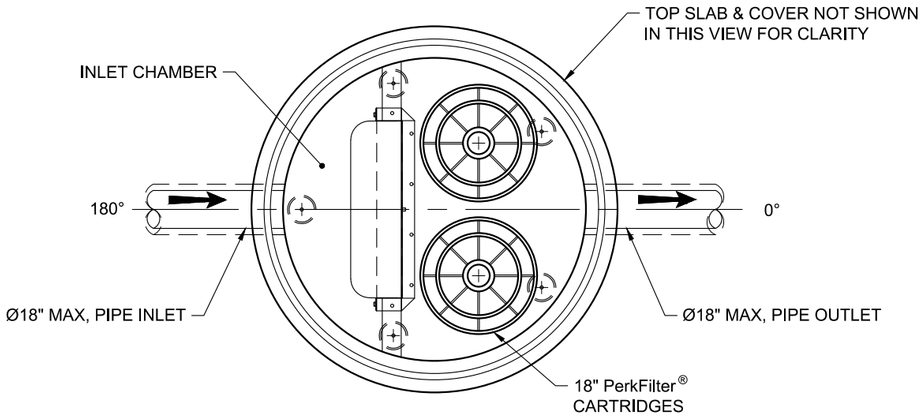
| Pipe Data | Pipe Location | Pipe Size | Pipe Type | Invert Elevation |
|---|---|---|---|---|
| Inlet | - | - | - | - |
| Outlet | - | - | - | - |

Notes:
-

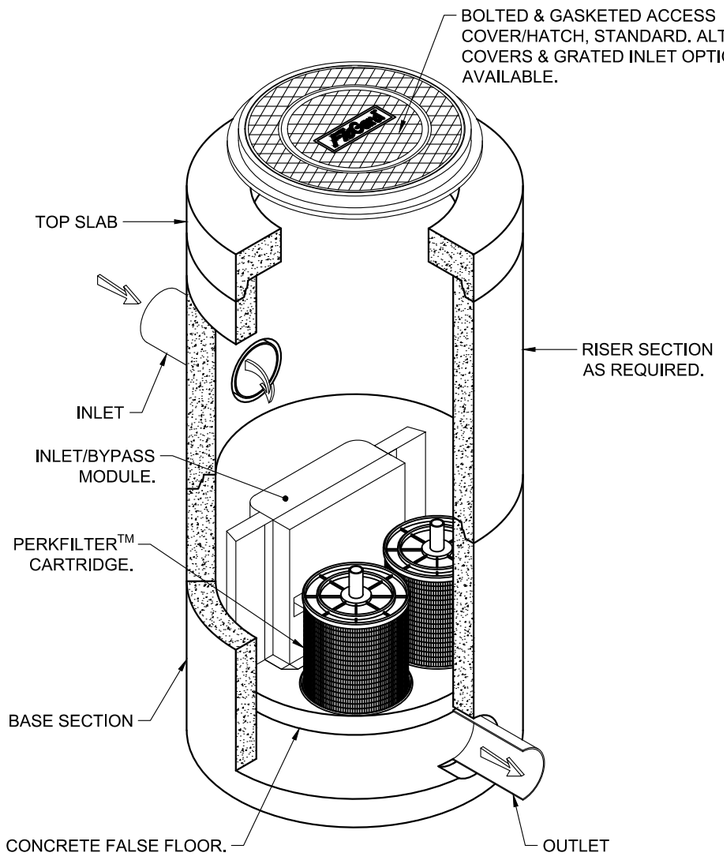
| PERFORMANCE SPECIFICATIONS | |
|---|---|
| Peak Treatment Capacities: [1] | |
| Max. Cartridge Quantity | 2 |
| NJDEP 80% Removal, 75 micron | 40.8 gpm / 0.091 cfs |
| WA Ecology GULD - Basic & Phosphorus | 20.4 gpm / 0.045 cfs |
| Max. Bypass Capacity | 3.05 cfs |

1. Contact Oldcastle for alternative treatment and peak flow capacities.

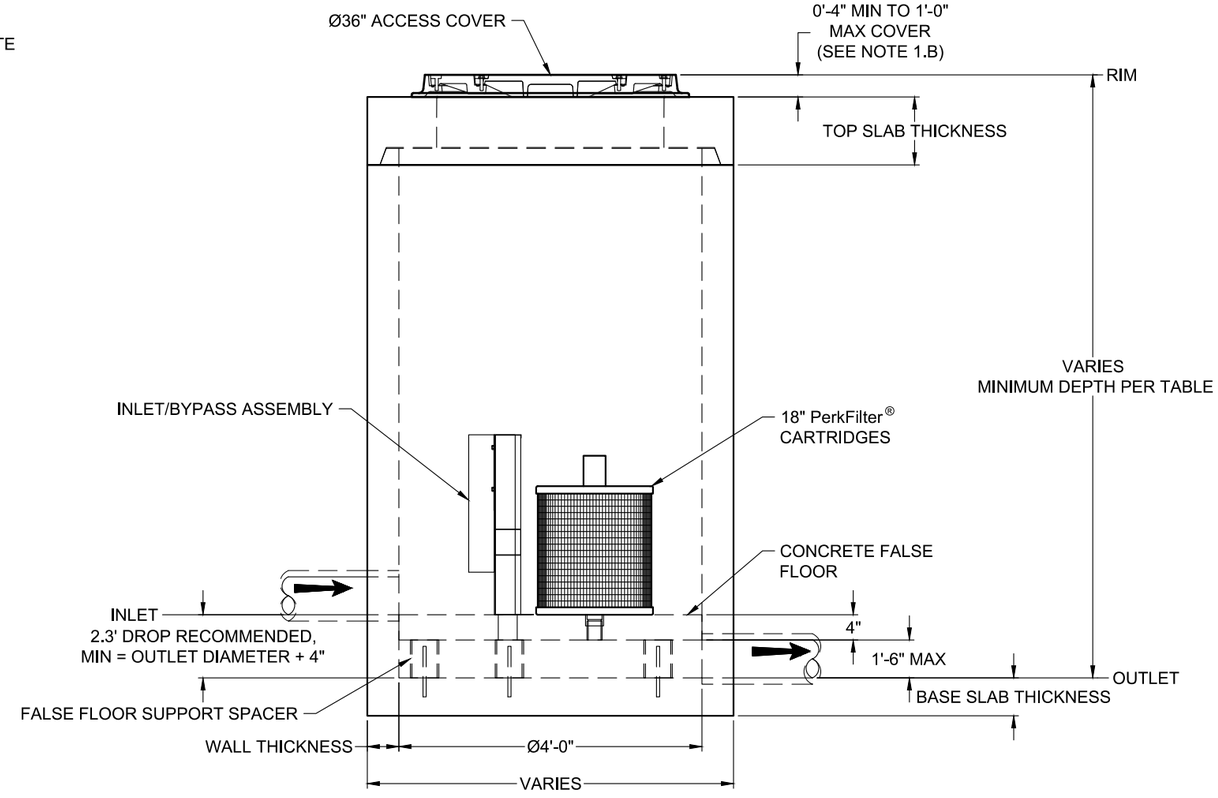
| MINIMUM DEPTH | |
|---|---|
| Outlet Pipe Size | Minimum Rim to Outlet Depth |
| Ø6" | 4.42' |
| Ø8" | 4.67' |
| Ø10" | 4.92' |
| Ø12" | 5.17' |
| Ø15" | 5.42' |
| Ø18" | 5.67' |




PLAN VIEW




ISOMETRIC VIEW




ELEVATION VIEW

NOTES:

1. DESIGN LOADINGS:
   A. AASHTO HS-20-44 (WITH IMPACT)
   B. DESIGN SOIL COVER: 1'-0" MAXIMUM
   C. ASSUMED WATER TABLE: BELOW INVERT.
   D. LATERAL EARTH PRESSURE: 45 PCF (DRAINED)
   E. LATERAL LIVE LOAD SURCHARGE: 80 PSF (APPLIED TO 8'-0" BELOW GRADE)
   F. NO LATERAL SURCHARGE FROM ADJACENT BUILDINGS, WALLS, PIERS, OR FOUNDATIONS.
2. CONCRETE 28-DAY MINIMUM COMPRESSIVE STRENGTH: 5,000 PSI MINIMUM.
3. REINFORCING: REBAR, ASTM A615/A706, GRADE 60
4. CEMENT: ASTM C150
5. REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2,500 PSF
6. REFERENCE STANDARD:
   A. ASTM C 478
   B. ASTM C 497
7. THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HEREIN. ENGINEER-OF-RECORD SHALL VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVIEWING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW OF THIS SUBMITTAL.
8. OVERSIZED HOLES TO ACCOMMODATE SPECIFIC PIPE TYPE MUST BE CONCENTRIC TO PIPE ID. AFTER PIPES ARE INSTALLED, ALL ANNULAR SPACES SHALL BE FILLED WITH A MINIMUM OF 3,000 PSI CONCRETE FOR FULL THICKNESS OF PRECAST WALLS. PIPES ARE TO BE FLUSH WITH THE INSIDE SURFACE OF THE CONCRETE STRUCTURE.
9. CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
10. CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
11. SECTION HEIGHTS, SLAB/WALL THICKNESSES, AND KEYWAYS ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
12. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT OLDCASTLE INFRASTRUCTURE.
13. MAXIMUM PICK WEIGHTS:
   A. TOP SLAB: XX,XXX LBS
   B. RISER: XX,XXX LBS
   C. BASE: XX,XXX LBS*
   (* COMBINED WEIGHT OF BASE INCLUDES FALSE FLOOR, AND PRODUCT INTERNALS.)
14. INTERNALS SHALL CONSIST OF CARTRIDGES, INLET/BYPASS ASSEMBLIES, FALSE FLOOR AND FALSE FLOOR SUPPORT SPACERS.

Oldcastle Infrastructure™
A CRH COMPANY

Ph: 800.579.8819 | www.oldcastleinfrastructure.com/stormwater

THIS DOCUMENT IS THE PROPERTY OF OLDCASTLE INFRASTRUCTURE, INC. IT IS CONFIDENTIAL, SUBMITTED FOR REFERENCE PURPOSES ONLY AND SHALL NOT BE USED IN ANY WAY INJURIOUS TO THE INTERESTS OF, OR WITHOUT THE WRITTEN PERMISSION OF OLDCASTLE INFRASTRUCTURE, INC. COPYRIGHT © 2023 OLDCASTLE INFRASTRUCTURE, INC. ALL RIGHTS RESERVED.

PerkFilter® Manhole (STANDARD)
Ø48" with 18" Cartridges

CUSTOMER
-

PROJECT NAME
-

| SHEET NAME | REVISION | SHEET |
|---|---|---|
| Specifier Drawing PFMH-48-18 | - | 1 OF 1 |
| | REV DATE - | |

Media Filtration

APPENDIX VI

# Supplemental Civil Drawings

# EROSION CONTROL PLAN, NOTES, & DETAILS

EROSION CONTROL LEGEND

- SILT SACK.
- BIO BAGS.
- SILT FENCE.

DEMOLITION LEGEND

- (S) SAWCUT.
- (R) CONTRACTOR TO REMOVE.
- (P) CONTRACTOR TO PROTECT

SILT FENCE (TYP.)

SILT FENCE (TYP.)

SILT FENCE (TYP.)

CHAIN LINK FENCE

N 02°23'39" E 100.00'

N 87°52'25" W 50.00'

N 87°52'25" W 100.00'

S 02°23'39" W 201.80'

NO ACCESS TO SEARCH FOR THIS CORNER

(R) CONCRETE

(R) FENCE

(R) GATE

(R) BOLLARDS

(R) BUILDING

(R) ASPHALT

(R) SIDEWALK

(R) CURB

(P) CURB

(P) SIDEWALK

(S)

GRAVEL CONSTRUCTION ENTRANCE

EXISTING BUILDING 1930 23RD AVENUE

LEAN TO NOT SHOWN

CONCRETE (DEBRIS COVERS PAD)

CHAIN LINK FENCE

EDGE OF CONCRETE

EDGE OF ASPHALT

GAS LINE AS PAINTED

PP W/ UNDERGROUND

PVC PIPE UNDERGROUND

POSSIBLE CLEAN OUT FOR DOWN SPOUT

CO FLUSH WITH GROUND

FD 5/8" IRON ROD

FD 5/8" IRON ROD (POSSIBLY DISTURBED BY LARGE BOULDER)

FF EL=195.3

FF EL=195.2

FF EL=195.5

FF EL=195.7

FF EL=195.4

23RD AVENUE

TAX LOT 5500

TAX LOT 5600

0 5 10 20 FEET

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | | REVISIONS | |

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026

REVIEW


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# EXISTING CONDITIONS, EROSION CONTROL, AND DEMOLITION PLAN

DRAWING
C1.0

JOB NUMBER
3547.0000.0

3/10/2025 3:36:07 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\EC EC Demo Plan.dwg, (C1.0 tab)

| | |
|---|---|
| STUDIO 3 ARCHITECTURE | DRAWING C1.1 |
| 1930 23RD FOREST GROVE | JOB NUMBER 3547.0000.0 |
| POST-DEVELOPED EROSION CONTROL PLAN | |

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 12, 2005 — WILLIAM J. WELLS — RENEWS: 6/30/2026

REVIEW

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY
0 1"

DATE: NOV 24
DSN. JW
DRN. IH
CKD. JW

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | | | |

REVISIONS

0 5 10 20 FEET

23RD AVENUE

EROSION CONTROL LEGEND
SILT SACK.
BIO BAGS.
SILT FENCE.

SILT FENCE (TYP.)

SILT SACKS (TYP.)

SILT FENCE (TYP.)

SILT FENCE (TYP.)

FF=196.15

FF=196.12

TAX LOT 5600

TAX LOT 5500

NO ACCESS TO SEARCH FOR THIS CORNER

N 87°51'25" W 50.00'

N 87°52'50" W 100.00'

S 02°23'19" W 201.80'

CHAIN LINK FENCE

EDGE OF CONCRETE

GAS LINE AS PAINTED

WATER LINE AS PAINTED

STORM LINE PER CITY ASBUILTS

SEWER LINE PER CITY ASBUILTS

PP W/ UNDERGROUND

FD 5/8" IRON ROD

FD 5/8" IRON ROD (POSSIBLY DISTURBED BY LARGE BOULDER)

POSSIBLE CLEAN OUT FOR DOWN SPOUT

CO FLUSH WITH BUILDING

52% MAX

1.5%

GRAVEL

CONCRETE

GUTTER

DRIVEWAY

NOTES:

1. WHEN RAINFALL AND RUNOFF OCCURS, A KNOWLEDGEABLE AND EXPERIENCED PERSON IN THE PRINCIPLES, PRACTICES, INSTALLATION, AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS WHO WORKS FOR THE PERMITTEE MUST PROVIDE DAILY INSPECTIONS OF THE EROSION AND SEDIMENT CONTROLS AND DISCHARGE OUTFALLS.
2. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND FROM OCTOBER 1 THROUGH MAY 31ST EACH YEAR.
3. DURING WET WEATHER PERIOD, TEMPORARY STABILIZATION OF THE SITE MUST OCCUR AT THE END OF EACH WORK DAY.
4. SEDIMENT CONTROLS MUST BE INSTALLED AND MAINTAINED ON ALL DOWN GRADIENT SIDES OF THE CONSTRUCTION SITE AT ALL TIMES DURING CONSTRUCTION. THEY MUST REMAIN IN PLACE UNTIL PERMANENT VEGETATION OR OTHER PERMANENT COVERING OF EXPOSED SOIL IS ESTABLISHED.
5. ALL ACTIVE INLETS MUST HAVE SEDIMENT CONTROLS INSTALLED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
6. SIGNIFICANT AMOUNTS OF SEDIMENT THAT LEAVES THE SITE MUST BE CLEANED UP WITHIN 24 HOURS AND PLACED BACK ON THE SITE AND STABILIZED OR PROPERLY DISPOSED. THE CAUSE OF THE SEDIMENT RELEASE MUST BE FOUND AND PREVENTED FROM CAUSING A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN UP OF SEDIMENT SHALL BE PREFORMED ACCORDING TO THE OREGON DEPARTMENT OF STATE LANDS REQUIRED TIME FRAME.
7. SEDIMENT MUST NOT BE INTENTIONALLY WASHED INTO STORM SEWERS, DRAINAGE WAYS, OR WATER BODIES.
8. SEDIMENT MUST BE REMOVED FROM BEHIND ALL SEDIMENT CONTROL MEASURES WHEN IT HAS REACHED A HEIGHT OF 1/3-RD THE BARRIER HEIGHT AND PRIOR TO THE CONTROL MEASURES REMOVAL.
9. CLEANING OF ALL STRUCTURES WITH SUMPS MUST OCCUR WHEN THE SEDIMENT RETENTION CAPACITY HAS BEEN REDUCED BY 50% AND AT COMPLETION OF PROJECT.
10. ANY USE OF TOXIC OR OTHER HAZARDOUS MATERIALS MUST INCLUDE PROPER STORAGE, APPLICATION, AND DISPOSAL.
11. THE PERMITTEE MUST PROPERLY MANAGE HAZARDOUS WASTES, USED OILS, CONTAMINATED SOILS, CONCRETE WASTE, SANITARY WASTE, LIQUID WASTE, OR OTHER TOXIC SUBSTANCES DISCOVERED OR GENERATED DURING CONSTRUCTION.
12. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS. NUTRIENT RELEASES FROM FERTILIZERS TO SURFACE WATERS MUST BE MINIMIZED. TIME RELEASE FERTILIZERS SHOULD BE USED AND CARE SHOULD BE MADE IN APPLICATION OF FERTILIZERS WITHIN ANY WATER WAY RIPARIAN ZONE.
13. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH CURRENT CLEAN WATER SERVICES STANDARDS AND STATE, AND FEDERAL REGULATIONS.
14. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BOUNDARIES OF THE CLEARING LIMITS, VEGETATED BUFFERS, AND ANY SENSITIVE AREAS SHOWN ON THIS PLAN SHALL BE CLEARLY DELINEATED IN THE FIELD. UNLESS OTHERWISE APPROVED, NO DISTURBANCE IS PERMITTED BEYOND THE CLEARING LIMITS. THE OWNER/PERMITTEE MUST MAINTAIN THE DELINEATION FOR THE DURATION OF THE PROJECT. NOTE: VEGETATED CORRIDORS TO BE DELINEATED WITH ORANGE CONSTRUCTION FENCE OR APPROVED EQUAL.
15. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BMPS THAT MUST BE INSTALLED ARE GRAVEL CONSTRUCTION ENTRANCE, PERIMETER SEDIMENT CONTROL, AND INLET PROTECTION. THESE BMPS MUST BE MAINTAINED FOR THE DURATION OF THE PROJECT.
16. IF VEGETATIVE SEED MIXES ARE SPECIFIED, SEEDING MUST TAKE PLACE NO LATER THAN SEPTEMBER 1ST; THE TYPE AND PERCENTAGES OF SEED IN THE MIX ARE AS IDENTIFIED ON THE PLANS OR AS SPECIFIED BY THE DESIGN ENGINEER.
17. WATERTIGHT TRUCKS MUST BE USED TO TRANSPORT SATURATED SOILS FROM THE CONSTRUCTION SITE. AN APPROVED EQUIVALENT IS TO DRAIN THE SOIL ON SITE AT A DESIGNATED LOCATION USING APPROPRIATE BMPS; SOIL MUST BE DRAINED SUFFICIENTLY FOR MINIMAL SPILLAGE.
18. ALL PUMPING OF SEDIMENT LADEN WATER MUST BE DISCHARGED OVER AN UNDISTURBED, PREFERABLY VEGETATED AREA, AND THROUGH A SEDIMENT CONTROL BMP (I.E. FILTER BAG).
19. THE ESC PLAN MUST BE KEPT ONSITE. ALL MEASURES SHOWN ON THE PLAN MUST BE INSTALLED PROPERLY TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER A SURFACE WATER SYSTEM, ROADWAY, OR OTHER PROPERTIES.
20. THE ESC MEASURES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE MEASURES SHALL BE UPGRADED AS NEEDED TO MAINTAIN COMPLIANCE WITH ALL REGULATIONS.
21. WRITTEN ESC LOGS ARE SUGGESTED TO BE MAINTAINED ONSITE AND AVAILABLE TO DISTRICT INSPECTORS UPON REQUEST.
22. IN AREAS SUBJECT TO WIND EROSION, APPROPRIATE BMPS MUST BE USED, WHICH MAY INCLUDE THE APPLICATION OF FINE WATER SPRAYING, PLASTIC SHEETING, MULCHING, OR OTHER APPROVED MEASURES.
23. ALL EXPOSED SOILS MUST BE COVERED, AT END OF BUSINESS DAY, DURING WET WEATHER PERIOD, FROM OCTOBER 1 - MAY 31.

# STANDARD EROSION CONTROL NOTES FOR SITES LESS THAN 1 ACRE

DRAWING NO. 945 REVISED 10-31-19

Clean Water Services

| YEAR: / MONTH: | '25 02 | '25 03 | '25 04 | '25 05 | '25 06 | '25 07 | '25 08 | '25 09 | '25 10 | '25 11 | '25 12 | '26 01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEARING | X | X | X | | | | | | | | | |
| EXCAVATION | X | X | X | X | | | | | | | | |
| GRADING | X | X | X | X | X | X | X | X | X | X | X | X |
| CONSTRUCTION | X | X | X | X | X | X | X | X | X | X | X | X |
| **SEDIMENT CONTROLS:** | | | | | | | | | | | | |
| Silt Fencing | X | X | X | X | X | X | X | X | X | X | X | X |
| Sediment Traps | X | X | X | X | X | X | X | X | X | X | X | X |
| Sediment Basins | | | | | | | | | | | | |
| Storm Inlet Protection | X | X | X | X | X | | | | | | | |
| Drainage Swales | | | | | | | | | | | | |
| Check Dams | | | | | | | | | | | | |
| Contour Furrows | | | | | | | | | | | | |
| Terracing | | | | | | | | | | | | |
| Pipe Slope Drains | | | | | | | | | | | | |
| Rock Outlet Protection | | | | | | | | | | | | |
| Gravel Construction Entrance | | | | | | | | | | | | |
| Grass-lined Channel (Turf Reinforcement Mats) | | | | | | | | | | | | |
| Protection of trees with construction fences | | | | | | | | | | | | |
| Temporary Seeding and Planting | | | | | | | | | | | | |
| Permanent Seeding and Planting | | | | | | X | X | X | X | X | X | X |
| Other: | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

| CONTROL MEASURE | PHASE 1 | PHASE 2 | PHASE 3 | PHASE 4 | PHASE 5 |
|---|---|---|---|---|---|
| Silt Fencing | X | X | X | X | |
| Construction Entrance | | | | | |
| Sediment Traps | X | X | X | X | |
| Storm Inlet Protection | X | X | X | X | |
| Concrete Washout | | | | | |
| Rock Outlet Protection | | | | | |
| Permanent Seeding and Planting | | | | | X |

Phase 1: Prior to Ground Disturbance
Phase 2: After Completion of Rough Grading
Phase 3: After Installation of Storm Facilities
Phase 4: After Paving & Construction
Phase 5: After Project Completion and Cleanup

INSPECTION FREQUENCY FOR BMP

| Site Condition | Minimum Frequency |
|---|---|
| 1. Active period | Daily when stormwater runoff, including runoff from snowmelt, is occurring.<br><br>At least once every 14 days, regardless of whether stormwater runoff is occurring. |
| 2. Prior to the site becoming inactive or in anticipation of site inaccessibility. | Once to ensure that erosion and sediment control measures are in working order. Any necessary maintenance and repair must be made prior to leaving the site. |
| 3. Inactive periods greater than seven (14) consecutive calendar days | Once every month. |
| 4. Periods during which the site is inaccessible due to inclement weather | If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location. |
| 5. Periods during which discharge is unlikely due to frozen conditions | Monthly. Resume monitoring immediately upon melt, or when weather conditions make discharge likely. |

BMP Rationale

A comprehensive list of available Best Management Practices (BMP) options based on DEQ's 1200-C Permit Application and ESCP Guidance Document has been reviewed to complete this Erosion and Sediment Control Plan. Some of the above listed BMPs were not chosen because they were determined to not effectively manage erosion prevention and sediment control for this project based on specific site conditions, including soil conditions, topographic constraints, accessibility to the site, and other related conditions. As the project progresses and there is a need to revise the ESCP, an Action Plan will be submitted.

SOIL TYPE(S): PER BENTON CO. SOIL SURVEY THE SITE SOILS INCLUDE "WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES"

EROSION HAZARD: PER BENTON CO. SOIL SURVEY EROSION HAZARD IS "SLIGHT".

SITE AREA: 0.58 AC

DISTURBANCE AREA: 0.52 AC

SUPPLEMENTAL WESTECH NOTES:

1. Erosion control measures shall be maintained in such a manner as to ensure that sediment and sediment-laden water does not enter the drainge system, roadways, or violate applicable water quality standards.
2. The erosion control construction, maintenance, replacement and upgrading of the erosion control facilities is the responsibility of the Contractor until all construction is completed and approved, and permanent erosion control (i.e. vegetation/landscaping) is established on all disturbed areas.
3. All recommended erosion control procedures are dependent on construction methods, staging, site conditions, weather and scheduling. During the construction period, erosion control facilities shall be upgraded as necessary due to unexpected storm events and to ensure that sediment and sediment laden water does not leave the site.
4. The Contractor is responsible for control of sediment transport within project limits. If an installed erosion control system does not adequately contain sediment on site, then the erosion control measures shall be adjusted or supplemented by the Contractor as necessary to ensure that sediment laden water does not leave the site. Additional measures shall be provided as required to ensure that all paved areas are kept clean for the duration of the project. Additional interim measures will include, at a minimum, installation of silt fences in accordance with the details shown on the drawings. These measures shall be installed along all exposed embankments and cut slopes to prevent sediment transport.
5. All existing and newly constructed storm inlets and drains shall be protected until pavement surfaces are completed and/or vegetation is established.
6. Erosion control facilities and sediment fences on active sites shall be inspected by the Contractor at least daily during any period with measurable precipitation. Any required repairs or maintenance shall be completed immediately. The erosion control facilities on inactive sites shall be inspected and maintained by the Contractor a minimum of once a month or within 24 hours following the start of a storm event.
7. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system. The Contractor shall remove all accumulated sediment from all impacted catch basins and storm pipes prior to acceptance by the Owner.
8. The Contractor is solely responsible for protection of all adjacent property and downstream facilities from erosion and siltation during project construction. Any damage resulting from such erosion and siltation shall be corrected at the sole expense of the Contractor.
9. The Contractor shall provide site watering as necessary to prevent wind erosion of fine-grained soils.
10. Unless otherwise indicated on the drawings, all temporary erosion control facilities, including sediment fences, silt sacks, bio-bags, etc. shall be removed by the Contractor within 30 days after permanent landscaping/vegetation is established.
11. Sediment fences shall be constructed of continuous filter fabric to avoid use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap, and both ends securely fastened to a post.
12. Sediment fence shall be installed per drawing details. Sediment fences shall have adequate support to contain all silt and sediment captured.
13. The standard strength filter fabric shall be fastened securely to stitched loops installed on the upslope side of the posts, and 6 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 30 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
14. Bio-filter bags shall be clean 100 percent wood product waste. Bags shall be 18-inch x 18-inch x 30-inch, weigh approximately 45 lbs., and be contained in a bag made of 1/2-inch plastic mesh.
15. Sediment barriers shall be maintained until the up-slope area has been permanently stabilized. At no time shall more than 10-inches of sediment be allowed to accumulate behind sediment fences. No more than 2 inches of sediment shall be allowed to accumulate behind bio-filter bags. Sediment shall be removed prior to reaching the above stated depths. New sediment barriers shall be installed uphill as required to control sediment transport.
16. Stabilized construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to ensure that all paved areas are kept clean for the duration of the project.
17. The Contractor shall verify that all trucks are well sealed when transporting saturated soils from the site. Water drippage from trucks transporting saturated soils must be reduced to less than 1 gallon per hour prior to leaving the site.
18. The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto the public right-of-way or approved access point. The entrance may require periodic top dressing as conditions demand, and repair and/or cleanout of any structures used to trap sediment.
19. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately, and the Contractor shall provide protection of downstream inlets and catch basins to ensure sediment laden water does not enter the storm drain system.
20. Temporary grass cover measures must be fully established by October 15th, or other cover measures (ie. erosion control blankets with anchors, 3-inches minimum of straw mulch, 6 mil HDPE plastic sheet, etc.) shall be in place over all disturbed soil areas until April 30th. To establish an adequate grass stand for controlling erosion by October 15th, it is recommended that seeding and mulching occur by September 1st. Straw mulch, if used, shall not leave any bare ground visible through the straw.
21. Minimum wet weather slope protection. For slopes steeper than 3H:1V but less than 2H:1V, use Tensar/North American Green Type S150 erosion control blanket. For slopes 2H:1V or steeper, use Tensar/North American Green Type SC150 erosion control blanket. Use a minimum of 2-inches straw mulch or Tensar/North American Green Type S150 for slopes flatter than 3H:1V. Slope protection shall be placed on all disturbed areas immediately after completion of each section of construction activity, until the erosion control seeding has been established. As an option during temporary or seasonal work stoppages, a 6-mil HDPE plastic sheet may be placed on exposed slopes. The plastic sheet shall be provided with an anchor trench at the top and bottom of the slope, and shall be sandbagged on the slopes as required to prevent damage or displacement by wind.
22. Permanent erosion control vegetation on all embankments and disturbed areas shall be re-established as soon as construction is completed.
23. Soil preparation. Topsoil should be prepared according to landscape plans, if available, or recommendations of grass seed supplier. It is recommended that slopes be textured before seeding by rack walking (ie. driving a crawling tractor up and down the slopes to leave a pattern of cleat imprints parallel to slope contours) or other method to provide stable areas for seeds to rest.
24. When used, hydromulch shall be applied with grass seed at a rate of 2000 lbs. per acre between April 30 and June 10, or between September 1 and October 1. On slopes steeper than 10 percent, hydroseed and mulch shall be applied with a bonding agent (tackifier). Application rate and methodology to be in accordance with seed supplier recommendations.
25. When used in lieu of hydromulch, dry, loose, weed free straw used as mulch shall be applied at a rate of 4000 lbs. per acre (double the hydromulch application requirement). Anchor straw by working in by hand or with equipment (rollers, cleat trackers, etc.). Mulch shall be spread uniformly immediately following seeding.
26. When conditions are not favorable to germination and establishment of the grass seed, the Contractor shall irrigate the seeded and mulched areas as required to establish the grass cover.
27. Seeding. Recommended erosion control grass seed mix is as follows. Dwarf grass mix (low height, low maintenance) consisting of dwarf perennial ryegrass (80 % by weight), creeping red fescue (20 % by weight). Application rate shall be 100 lbs. per acre minimum.
28. Grass seed shall be fertilized at a rate of 10 lbs. per 1000 S.F with 16- 16-16 slow release type fertilizer. Development areas within 50 feet of water bodies and wetlands must use a non-phosphorous fertilizer.
29. Prior to starting construction contractor shall acquire the services of a DEQ Certified Erosion and Sediment Control Inspector and shall submit an "Action Plan" to DEQ indentifying their names, contact information, training and experience as required in Schedule A.6.b.i-ii of the 1200-C Permit
30. Contractor shall submit "Notice of Termination" to DEQ to end the 1200-C permit coverage once all soil disturbance activities have been completed and final stabilization of exposed soils has occured.

| BY | DESCRIPTION | DATE | NO. |
|---|---|---|---|
| | REVISIONS | | 1 |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"
IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER OREGON NOV. 12, 2008 WILLIAM J. WELLS
REVIEW
RENEWS: 6/30/2026

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

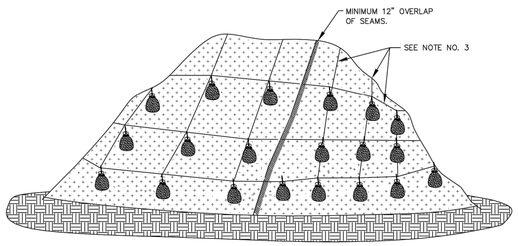
EROSION CONTROL NOTES

DRAWING
C1.2

JOB NUMBER
3547.0000.0

3/10/2025 3:36:27 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Ec Notes and Details.dwg, (C1.2 tab)

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.




PLASTIC SHEETING

NOTES:

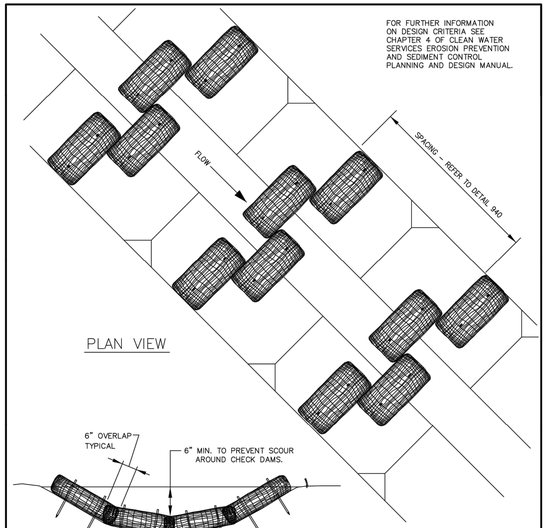
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. PERIMETER SEDIMENT CONTROL BMP TO BE INSTALLED A MIINIMUM OF 3' FROM TOE OF STOCKPILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR APPROVED EQUAL ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.
4. PLASTIC TO EXTEND MINIMUM 1' BEYOND TOE OF SLOPE.
5. AS APPROPRIATE, BMP'S SHALL BE INSTALLED TO CONVEY WATER DISCHARGE FROM STOCKPILE AREAS.

# PLASTIC SHEETING

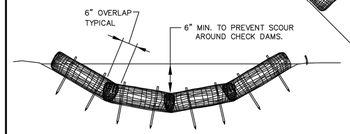
DRAWING NO. 810 REVISED 10-31-19

CleanWater Services

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.




PLAN VIEW




PROFILE

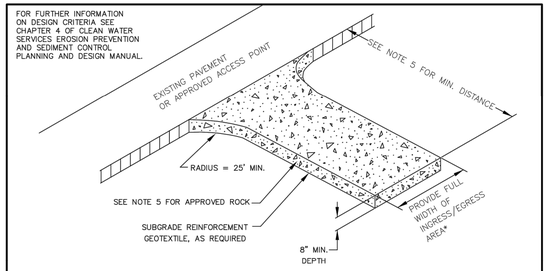
NOTES:

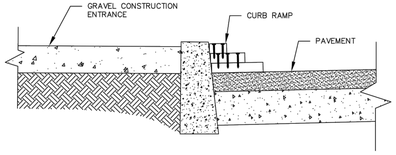
1. STAKING OF BAGS REQUIRED USING (2) 1"X2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. SURFACE MUST BE SMOOTH BEFORE APPLICATION.
3. CHECK DAMS CAN BE CONSTRUCTED USING STRAW WATTLES OR OTHER MATERIALS AS APPROVED BY THE DISTRICT OR CITY.

# CHECK DAM BIO-FILTER BAG

DRAWING NO. 845 REVISED 10-31-19

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.



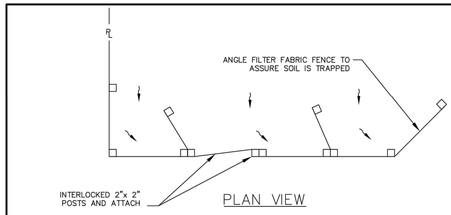

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF- WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.
5. DIMENSIONS
   SINGLE FAMILY
   20' LONG BY 20' WIDE 8" DEEP OF ¾" MINUS CLEAN ROCK.
   COMMERCIAL/SITE DEVELOPMENT
   50' LONG BY 20' WIDE 3-6" CLEAN ROCK, GOVERNING AUTHORITY MAY REQUIRE GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.

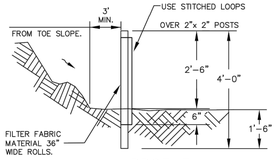
# CONSTRUCTION ENTRANCE

DRAWING NO. 855 REVISED 10-31-19

CleanWater Services



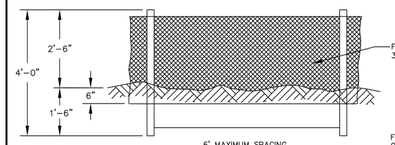

PLAN VIEW




PROFILE

NOTES:

1. SEDIMENT FENCE TO HAVE STITCHED LOOPS AROUND 2" x 2" POSTS.
2. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
3. 2"x 2" FIR, PINE OR STEEL FENCE POSTS.
4. POSTS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
5. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
6. PANELS MUST BE PLACED ACCORDING TO SPACING ON DRAWING NO. 940.




FRONT VIEW

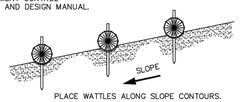
FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

# SEDIMENT FENCE

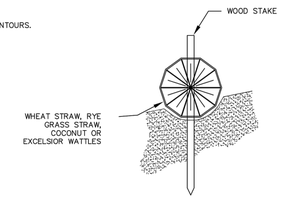
DRAWING NO. 875 REVISED 10-31-19

CleanWater Services

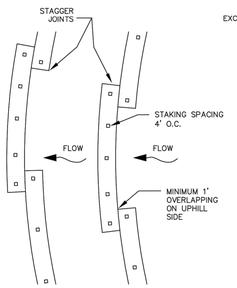
FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.




PROFILE




SECTION




PLAN VIEW

NOTES:

1. STAKING SPECIFICATIONS:
   a. 1"X2" WOODEN STAKES
   b. ADDITIONAL STAKES MAY BE INSTALLED ON DOWNHILL SIDE OF WATTLES, ON STEEP SLOPE OR HIGHLY EROSIVE SOILS.
2. SPACING IN ACCORDANCE WITH DETAIL 940.
3. REMOVE ALL ROCKS, CLODS, VEGETATION OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED WATTLES WILL HAVE DIRECT CONTACT WITH THE SOIL.
4. INSTALL THE WATTLES IN A 2" DEEP TRENCH, INSURING THAT NO GAPS EXIST BETWEEN THE SOIL AND THE BOTTOM OF THE WATTLE. THE ENDS OF ADJACENT WATTLES SHALL BE OVERLAPPED 1 FT. MINIMUM TO PREVENT SEDIMENT PASSING THROUGH THE FIELD JOINT.

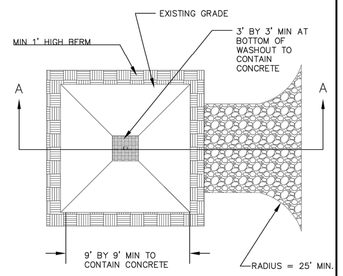
# WATTLES

DRAWING NO. 880 REVISED 10-31-19

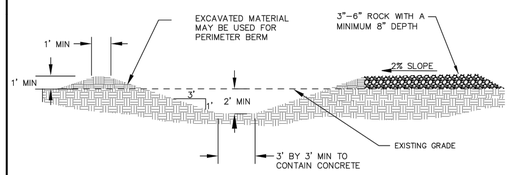
CleanWater Services

NOTES:

1. WASHOUT FACILITIES SHALL BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 12 INCHES.
2. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.
3. IF THE WASHOUT IS NEARING CAPACITY, VACUUM AND DISPOSE OF THE WASTE MATERIAL IN AN APPROVED MANNER.
4. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE LOCATED A MINIMUM OF 50 FT FROM SENSITIVE AREAS INCLUDING OPEN DRAINAGE FACILITIES AND WATER SOURSES.
5. CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
6. INSTALL CONCRETE WASHOUT SIGN WITHIN 30 FEET OF TEMPORARY CONCRETE WASHOUT FACILITY.
7. TEMPORARY CONCRETE WASHOUTS MAY BE A PREFABRICATED CONTAINER THAT IS PORTABLE AND REUSABLE.




PLAN

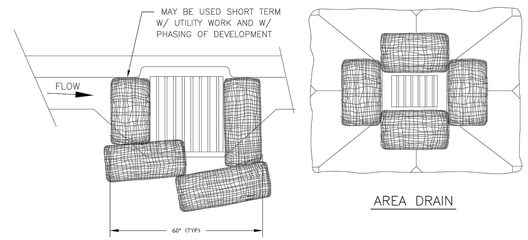



SECTION A-A

# CONCRETE WASHOUT

DRAWING NO. 900 REVISED 10-31-19

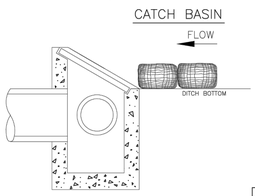
CleanWater Services



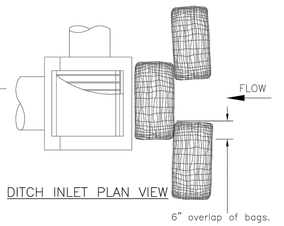

CATCH BASIN



AREA DRAIN




DITCH INLET




DITCH INLET PLAN VIEW

NOTES:

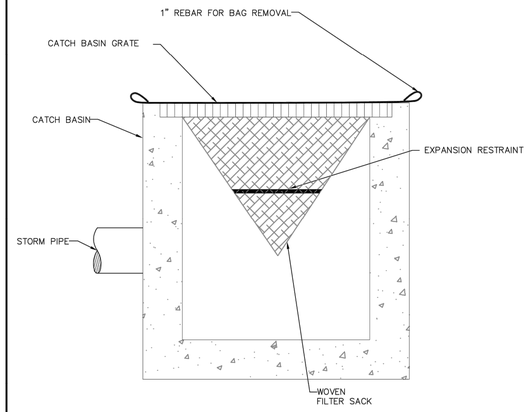
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. WHEN USING 30" BIO-BAGS TO PROTECT A CATCH BASIN YOU HAVE 4 BAGS AND THEY SHALL BE OVERLAPPED BY 6".

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

# INLET PROTECTION TYPE 4

DRAWING NO. 915 REVISED 10-31-19

CleanWater Services




CATCH BASIN INSERT

NOTE:

1. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER FABRIC INLET SACKS TO BE DETERMINED BY MANUFACTURER.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

# INLET PROTECTION TYPE 5

DRAWING NO. 920 REVISED 10-31-19

CleanWater Services

| BY | DESCRIPTION | DATE | NO. |
|---|---|---|---|
| | REVISIONS | | 1 |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
REVIEW
RENEWS: 6/30/2026


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

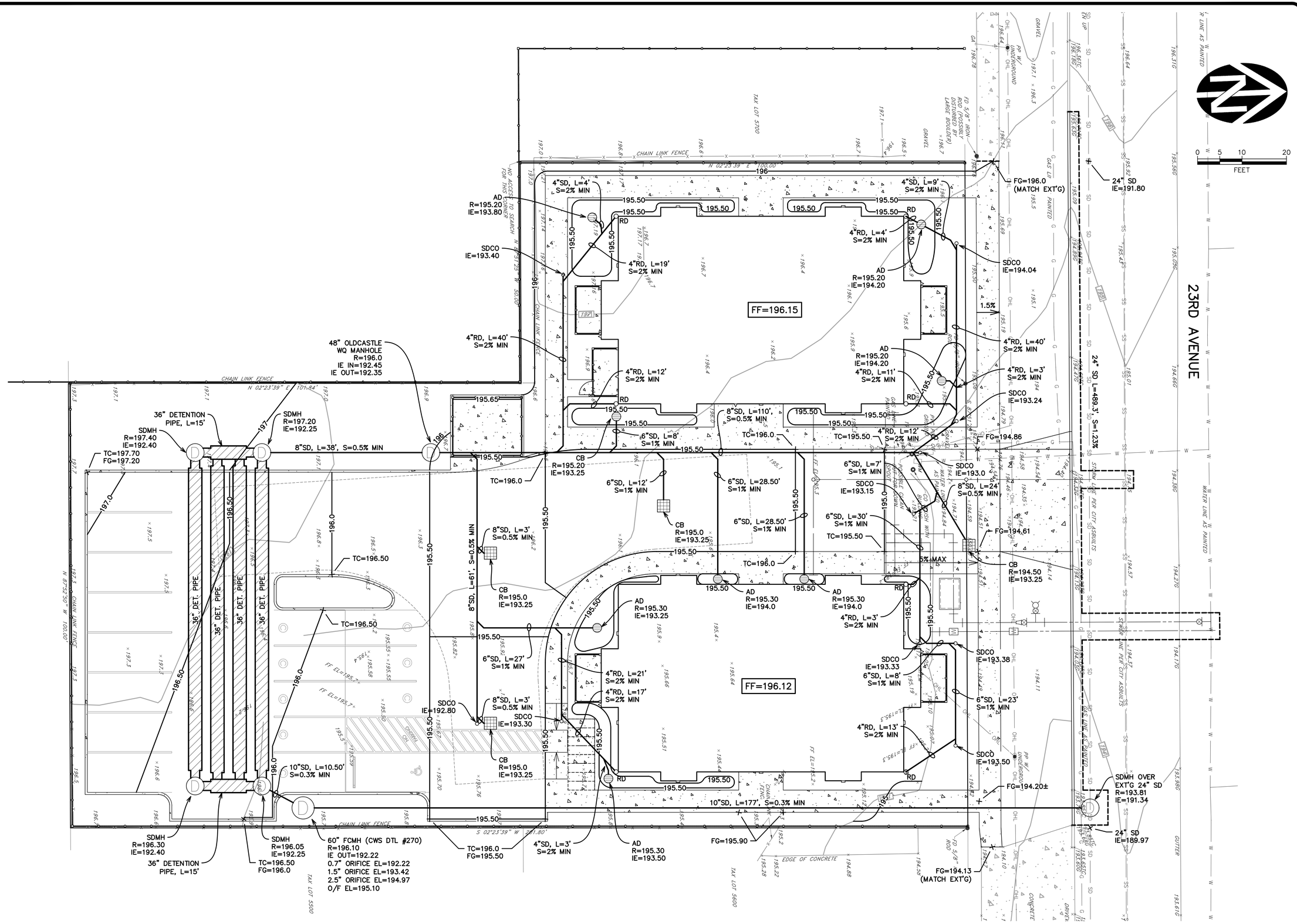
EROSION CONTROL DETAILS

DRAWING
C1.3

JOB NUMBER
3547.0000.0

3/10/2025 3:36:28 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Ec Notes and Details.dwg, (C1.3 tab)

# GRADING & DRAINAGE PLAN




| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | | REVISIONS | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY
0 1"

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026

REVIEW


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# GRADING AND DRAINAGE PLAN

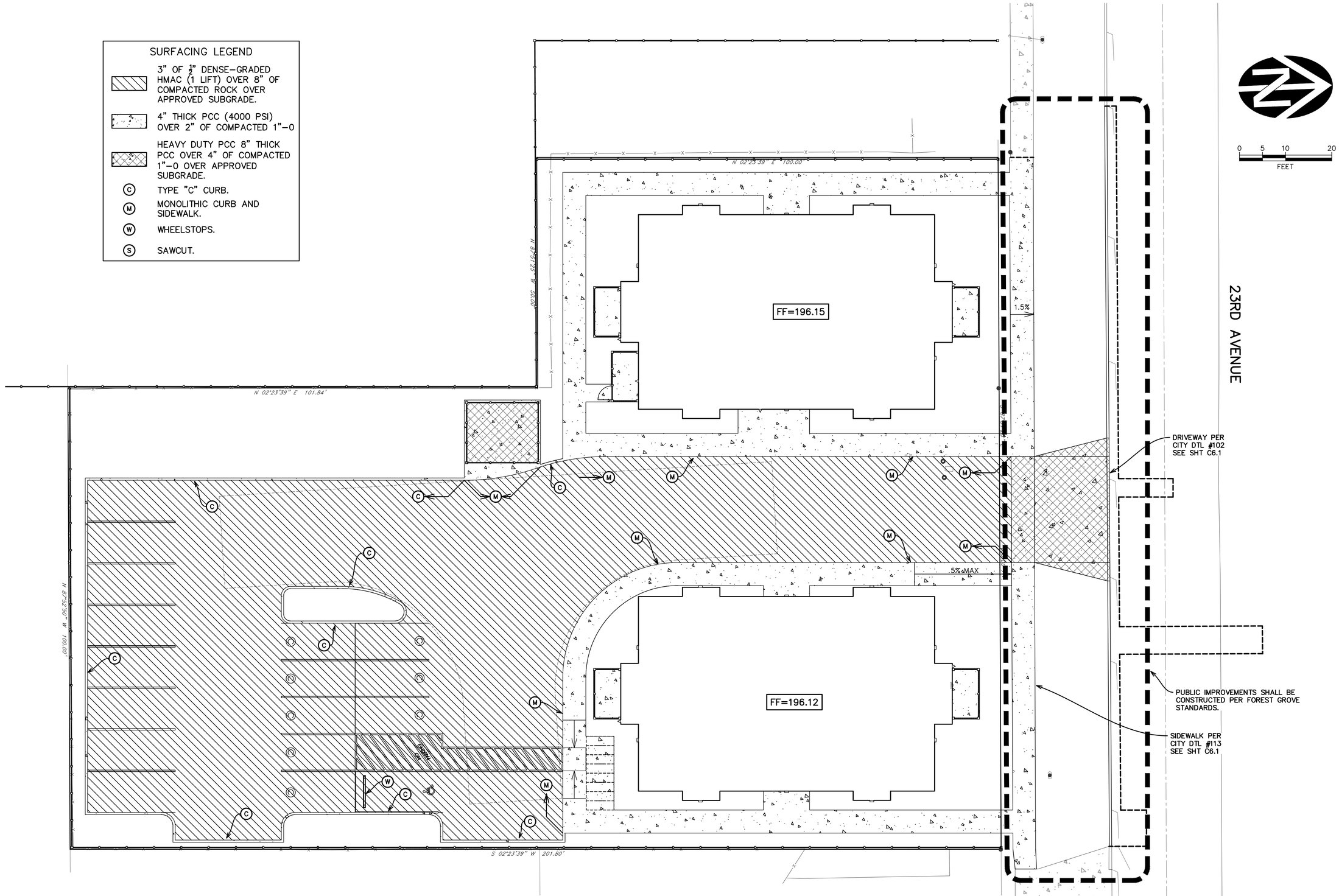
DRAWING
C2.0

JOB NUMBER
3547.0000.0

3/10/2025 3:36:40 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Grading and Drainage Plan.dwg, (C2.0 tab)

## SURFACING LEGEND

- 3" OF ½" DENSE-GRADED HMAC (1 LIFT) OVER 8" OF COMPACTED ROCK OVER APPROVED SUBGRADE.
- 4" THICK PCC (4000 PSI) OVER 2" OF COMPACTED 1"-0
- HEAVY DUTY PCC 8" THICK PCC OVER 4" OF COMPACTED 1"-0 OVER APPROVED SUBGRADE.
- (C) TYPE "C" CURB.
- (M) MONOLITHIC CURB AND SIDEWALK.
- (W) WHEELSTOPS.
- (S) SAWCUT.




| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |
| 1 | | | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 IF NOT ONE INCH, ADJUST THIS SHEET, ADJUST SCALES ACCORDINGLY
1"

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
RENEWS: 6/30/2026

REVIEW


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

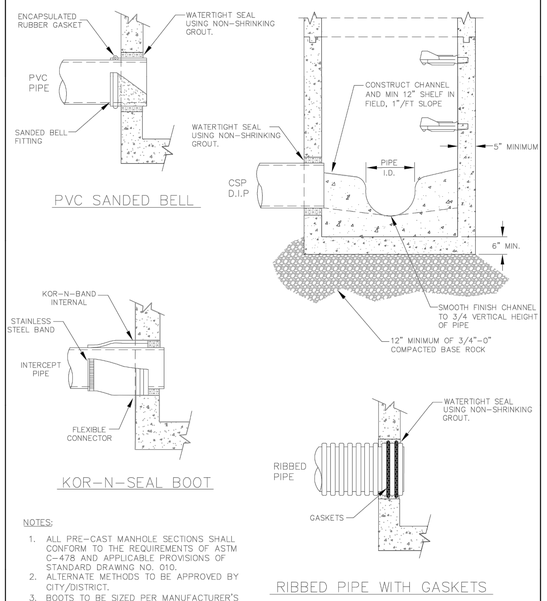

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

# SURFACING PLAN

DRAWING
C4.0

JOB NUMBER
3547.0000.0

3/10/2025 3:36:57 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Surfacing Plan.dwg, (C4.0 tab)



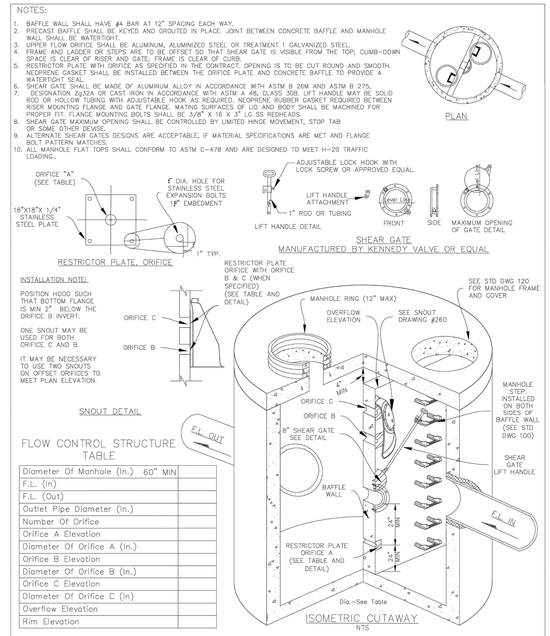

NOTES:

1. ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD DRAWING NO. 010.
2. ALTERNATE METHODS TO BE APPROVED BY CITY/DISTRICT.
3. BOOTS TO BE SIZED PER MANUFACTURER'S RECOMMENDATIONS/SPECIFICATIONS.

# MANHOLE CONNECTIONS

DRAWING NO. 030 — REVISED 10-31-19

CleanWater Services




NOTES:

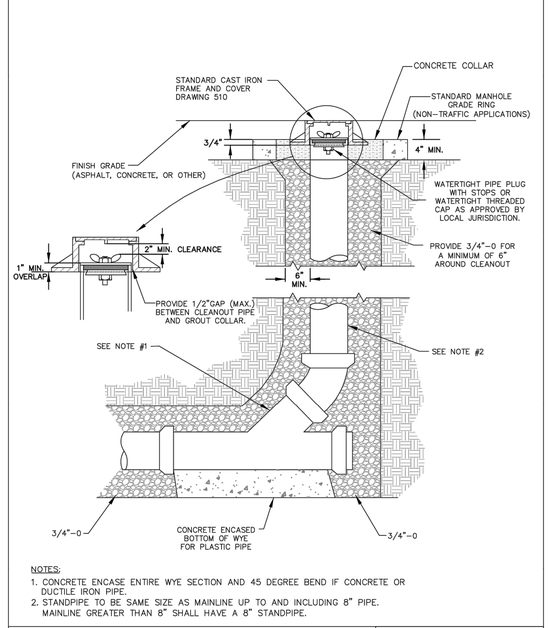
1. BAFFLE WALL SHALL HAVE #4 BAR AT 12" SPACING EACH WAY.
2. PRECAST BAFFLE SHALL BE KEYED AND GROUTED IN PLACE. JOINT BETWEEN CONCRETE BAFFLE AND MANHOLE WALL SHALL BE WATERTIGHT.
3. UPPER FLOW ORIFICE SHALL BE ALUMINUM, ALUMINIZED STEEL OR TREATMENT 1 GALVANIZED STEEL.
4. FRAME AND LADDER OR STEPS ARE TO BE OFFSET SO THAT SHEAR GATE IS VISIBLE FROM THE TOP; CLIMB-DOWN SPACE IS CLEAR OF RISER AND GATE; FRAME IS CLEAR OF CURB.
5. RESTRICTOR PLATE WITH ORIFICE AS SPECIFIED IN THE CONTRACT OPENING IS TO BE CUT ROUND AND SMOOTH. NEOPRENE GASKET SHALL BE INSTALLED BETWEEN THE ORIFICE PLATE AND CONCRETE BAFFLE TO PROVIDE A WATERTIGHT SEAL.
6. SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION 2s24 OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B. LIFT HANDLE MAY BE SOLID ROD OR HOLLOW TUBING WITH ADJUSTABLE HOOK AS REQUIRED. NEOPRENE RUBBER GASKET REQUIRED BETWEEN RISER MOUNTING FLANGE AND GATE FLANGE. MATING SURFACES OF LID AND BODY SHALL BE MACHINED FOR PROPER FIT. FLANGE MOUNTING BOLTS SHALL BE 3/8" X 16 X 3" LG SS REDHEADS.
7. SHEAR GATE MAXIMUM OPENING SHALL BE CONTROLLED BY LIMITED HINGE MOVEMENT, STOP TAB OR SOME OTHER DEVISE.
8. ALTERNATE SHEAR GATES DESIGNS ARE ACCEPTABLE, IF MATERIAL SPECIFICATIONS ARE MET AND FLANGE BOLT PATTERN MATCHES.
9. ALL MANHOLE FLAT TOPS SHALL CONFORM TO ASTM C-478 AND ARE DESIGNED TO MEET H-20 TRAFFIC LOADING.

| FLOW CONTROL STRUCTURE TABLE | |
|---|---|
| Diameter Of Manhole (In.) 60" MIN | |
| F.L. (In) | |
| F.L. (Out) | |
| Outlet Pipe Diameter (In.) | |
| Number Of Orifice | |
| Orifice A Elevation | |
| Diameter Of Orifice A (In.) | |
| Orifice B Elevation | |
| Diameter Of Orifice B (In.) | |
| Orifice C Elevation | |
| Diameter Of Orifice C (In) | |
| Overflow Elevation | |
| Rim Elevation | |

# FLOW CONTROL STRUCTURE DETAIL

DRAWING NO. 270 — REVISED 10-31-19

CleanWater Services



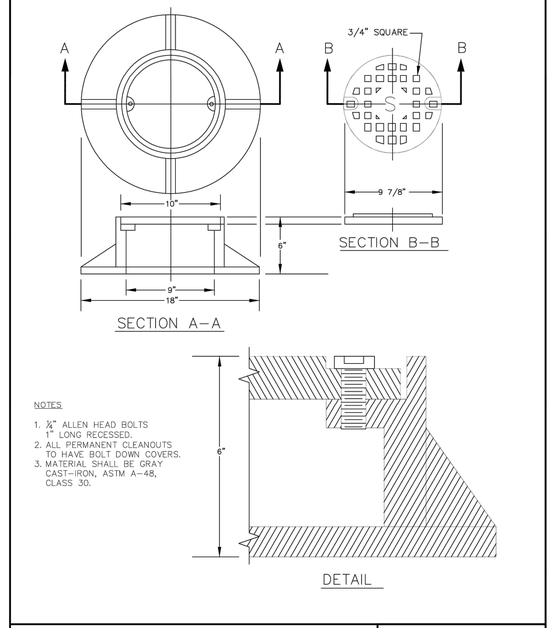

NOTES:

1. CONCRETE ENCASE ENTIRE WYE SECTION AND 45 DEGREE BEND IF CONCRETE OR DUCTILE IRON PIPE.
2. STANDPIPE TO BE SAME SIZE AS MAINLINE UP TO AND INCLUDING 8" PIPE. MAINLINE GREATER THAN 8" SHALL HAVE A 8" STANDPIPE.

# STANDARD CLEANOUT

DRAWING NO. 500 — REVISED 10-31-19

CleanWater Services



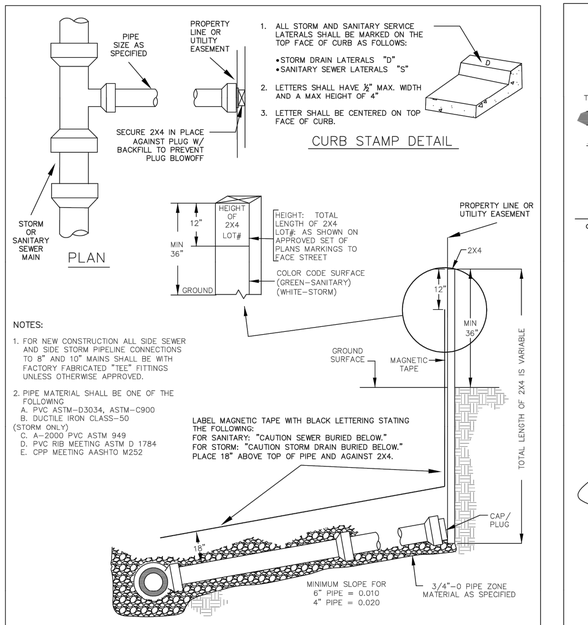

NOTES

1. ¼" ALLEN HEAD BOLTS 1" LONG RECESSED.
2. ALL PERMANENT CLEANOUTS TO HAVE BOLT DOWN COVERS.
3. MATERIAL SHALL BE GRAY CAST-IRON, ASTM A-48, CLASS 30.

# CLEANOUT FRAME AND COVER

DRAWING NO. 510 — REVISED 10-31-19

CleanWater Services




1. ALL STORM AND SANITARY SERVICE LATERALS SHALL BE MARKED ON THE TOP FACE OF CURB AS FOLLOWS:
   - STORM DRAIN LATERALS "D"
   - SANITARY SEWER LATERALS "S"
2. LETTERS SHALL HAVE ½" MAX. WIDTH AND A MAX HEIGHT OF 4"
3. LETTER SHALL BE CENTERED ON TOP FACE OF CURB.

CURB STAMP DETAIL

NOTES:

1. FOR NEW CONSTRUCTION ALL SIDE SEWER AND SIDE STORM PIPELINE CONNECTIONS TO 8" AND 10" MAINS SHALL BE WITH FACTORY FABRICATED "TEE" FITTINGS UNLESS OTHERWISE APPROVED.
2. PIPE MATERIAL SHALL BE ONE OF THE FOLLOWING
   A. PVC ASTM-D3034, ASTM-C900
   B. DUCTILE IRON CLASS-50

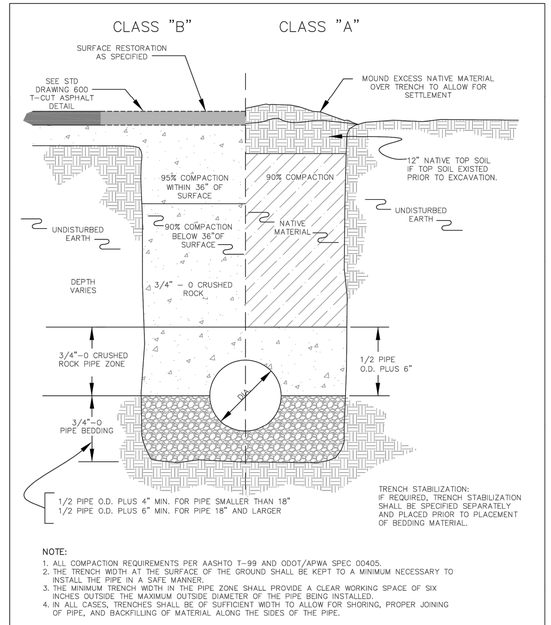
(STORM ONLY)

   C. A-2000 PVC ASTM 949
   D. PVC RIB MEETING ASTM D 1784
   E. CPP MEETING AASHTO M252

# SIDE SEWER / SIDE STORM PIPELINE

DRAWING NO. 520 — REVISED 10-31-19

CleanWater Services



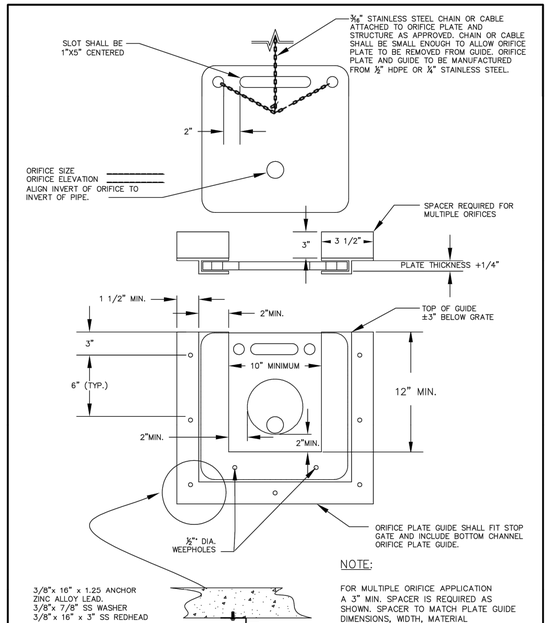

NOTE:

1. ALL COMPACTION REQUIREMENTS PER AASHTO T-99 AND ODOT/APWA SPEC 00405.
2. THE TRENCH WIDTH AT THE SURFACE OF THE GROUND SHALL BE KEPT TO A MINIMUM NECESSARY TO INSTALL THE PIPE IN A SAFE MANNER.
3. THE MINIMUM TRENCH WIDTH IN THE PIPE ZONE SHALL PROVIDE A CLEAR WORKING SPACE OF SIX INCHES OUTSIDE THE MAXIMUM OUTSIDE DIAMETER OF THE PIPE BEING INSTALLED.
4. IN ALL CASES, TRENCHES SHALL BE OF SUFFICIENT WIDTH TO ALLOW FOR SHORING, PROPER JOINING OF PIPE, AND BACKFILLING OF MATERIAL ALONG THE SIDES OF THE PIPE.

# TRENCH BACKFILL DETAILS

DRAWING NO. 590 — REVISED 10-31-19

CleanWater Services




NOTE:

FOR MULTIPLE ORIFICE APPLICATION A 3" MIN. SPACER IS REQUIRED AS SHOWN. SPACER TO MATCH PLATE GUIDE DIMENSIONS, WIDTH, MATERIAL WITH A WATERTIGHT SEAL.

# ORIFICE PLATE AND GUIDE

DRAWING NO. 711 — REVISED 10-31-19

CleanWater Services

| NO. | DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|---|
| | | | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOV. 12, 2008
WILLIAM J. WELLS
REVIEW
RENEWS: 6/30/2026


WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com


STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

DETAILS (CLEAN WATER SERVICES)

DRAWING
C6.3

JOB NUMBER
3547.0000.0

3/10/2025 3:37:09 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Notes and Details.dwg, (C6.3 tab)

| SITE SPECIFIC DATA | |
|---|---|
| Structure ID | - |
| Treatment Flow Rate (gpm/cfs) | - |
| Peak Flow Rate (cfs) | - |
| Cartridge Quantity | - |
| Rim Elevation | - |

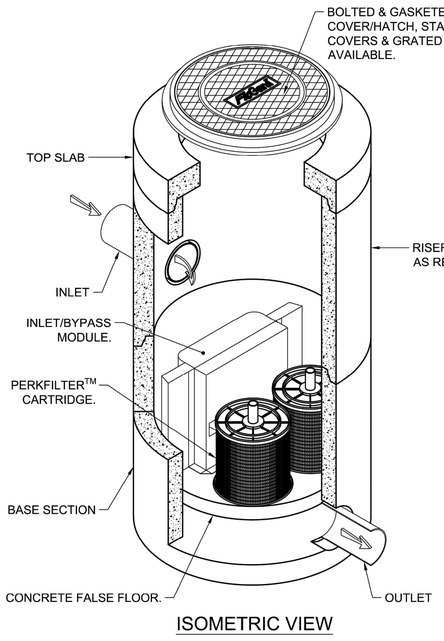
| Pipe Data | Pipe Location | Pipe Size | Pipe Type | Invert Elevation |
|---|---|---|---|---|
| Inlet | - | - | - | - |
| Outlet | - | - | - | - |

Notes:
-

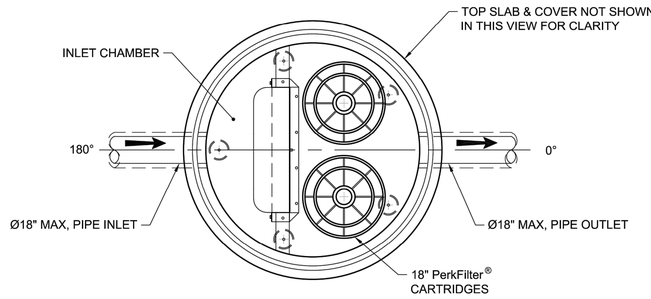
| MINIMUM DEPTH | |
|---|---|
| Outlet Pipe Size | Minimum Rim to Outlet Depth |
| Ø6" | 4.42' |
| Ø8" | 4.67' |
| Ø10" | 4.92' |
| Ø12" | 5.17' |
| Ø15" | 5.42' |
| Ø18" | 5.67' |

| PERFORMANCE SPECIFICATIONS | |
|---|---|
| Peak Treatment Capacities: [1] | |
| Max. Cartridge Quantity | 2 |
| NJDEP 80% Removal, 75 micron | 40.8 gpm / 0.091 cfs |
| WA Ecology GULD - Basic & Phosphorus | 20.4 gpm / 0.045 cfs |
| Max. Bypass Capacity | 3.05 cfs |

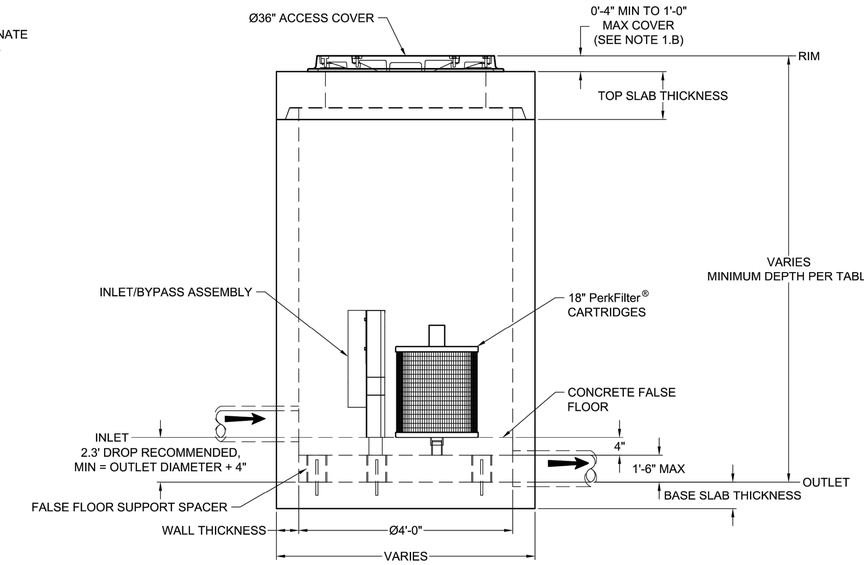
1. Contact Oldcastle for alternative treatment and peak flow capacities.




ISOMETRIC VIEW




PLAN VIEW




ELEVATION VIEW

NOTES:

1. DESIGN LOADINGS:
   A. AASHTO HS-20-44 (WITH IMPACT)
   B. DESIGN SOIL COVER: 1'-0" MAXIMUM
   C. ASSUMED WATER TABLE: BELOW INVERT.
   D. LATERAL EARTH PRESSURE: 45 PCF (DRAINED)
   E. LATERAL LIVE LOAD SURCHARGE: 80 PSF (APPLIED TO 8'-0" BELOW GRADE)
   F. NO LATERAL SURCHARGE FROM ADJACENT BUILDINGS, WALLS, PIERS, OR FOUNDATIONS.
2. CONCRETE 28-DAY MINIMUM COMPRESSIVE STRENGTH: 5,000 PSI MINIMUM.
3. REINFORCING: REBAR, ASTM A615/A706, GRADE 60
4. CEMENT: ASTM C150
5. REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2,500 PSF
6. REFERENCE STANDARD:
   A. ASTM C 478
   B. ASTM C 497
7. THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HEREIN. ENGINEER-OF-RECORD SHALL VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVIEWING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW OF THIS SUBMITTAL.
8. OVERSIZED HOLES TO ACCOMMODATE SPECIFIC PIPE TYPE MUST BE CONCENTRIC TO PIPE ID. AFTER PIPES ARE INSTALLED, ALL ANNULAR SPACES SHALL BE FILLED WITH A MINIMUM OF 3,000 PSI CONCRETE FOR FULL THICKNESS OF PRECAST WALLS. PIPES ARE TO BE FLUSH WITH THE INSIDE SURFACE OF THE CONCRETE STRUCTURE.
9. CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
10. CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
11. SECTION HEIGHTS, SLAB/WALL THICKNESSES, AND KEYWAYS ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
12. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT OLDCASTLE INFRASTRUCTURE.
13. MAXIMUM PICK WEIGHTS:
   A. TOP SLAB: XX,XXX LBS
   B. RISER: XX,XXX LBS
   C. BASE: XX,XXX LBS*
   (* COMBINED WEIGHT OF BASE INCLUDES FALSE FLOOR, AND PRODUCT INTERNALS.)
14. INTERNALS SHALL CONSIST OF CARTRIDGES, INLET/BYPASS ASSEMBLIES, FALSE FLOOR AND FALSE FLOOR SUPPORT SPACERS.

Media Filtration

Oldcastle Infrastructure™ A CRH COMPANY

Ph: 800.579.8819 | www.oldcastleinfrastructure.com/stormwater

THIS DOCUMENT IS THE PROPERTY OF OLDCASTLE INFRASTRUCTURE, INC. IT IS CONFIDENTIAL, SUBMITTED FOR REFERENCE PURPOSES ONLY AND SHALL NOT BE USED IN ANY WAY INJURIOUS TO THE INTERESTS OF, OR WITHOUT THE WRITTEN PERMISSION OF OLDCASTLE INFRASTRUCTURE, INC. COPYRIGHT © 2023 OLDCASTLE INFRASTRUCTURE, INC. ALL RIGHTS RESERVED.

PerkFilter® Manhole (STANDARD)

Ø48" with 18" Cartridges

CUSTOMER: -

PROJECT NAME: -

| SHEET NAME | REVISION | SHEET |
|---|---|---|
| Specifier Drawing PFMH-48-18 | - | 1 OF 1 |
| | REV DATE: - | |

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | REVISIONS | |
| 1 | | | |

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN. JW
DRN. IH
CKD. JW
DATE: NOV 24

REGISTERED PROFESSIONAL ENGINEER OREGON NOV. 12, 2008 WILLIAM J. WELLS
REVIEW
RENEWS: 6/30/2026

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

STUDIO 3 ARCHITECTURE
1930 23RD FOREST GROVE

DETAILS (OLDCASTLE)

DRAWING
C6.4

JOB NUMBER
3547.0000.0

3/10/2025 3:37:12 PM
R:\Dwg\Studio3\1930 23rd Forest Grove\Civil\Plots\Notes and Details.dwg, (C6.4 tab)

# Project Review Form – COMMENTS & CONDITIONS

| |
|---|
| **DATE:** |
| **YOUR DEADLINE:** |
| **PERMIT #:** 311-24-000041-PLNG |
| **PROJECT NAME:** |
| **TO:** Building, Engineering, Fire, Light and Power, Police, Public Works |

Please review the attached material and return it with any comments and potential approval conditions. Your timely attention to this review ensures that the City maintains compliance with state-mandated deadlines. **This form must be returned to the Community Development Department (hard copy or digitally) by "YOUR Deadline."** Thank you.

_____ I have reviewed the application and have no comments or conditions.

__X__ I have reviewed the application and have the following comments and conditions (attach additional sheets as necessary):

1. Up to a 10ft P.U.E may be required along the property fronting 23rd Avenue, and additional easements throughout the site may be needed depending on the final electrical design.
2. A CAD file of the site plan shall be provided to FGL&P, including all wet utilities and easements.
3. Developer shall provide a completed commercial service application to FGL&P.
4. Developer should contact FGL&P directly to discuss project needs and locations of electrical equipment.
5. The developer shall reference FGL&P service requirements and standards for metering equipment and submit the metering equipment spec sheet to FGL&P for approval.
6. Developer will be responsible for all costs associated with electrical design as identified in the FGL&P line extension policy.
7. All lighting within the project will be customer-owned and installed behind a house meter.
8. Prepayment of transformers and materials is required, these costs will be determined upon final electrical design. Labor & equipment will be billed after FGL&P has completed their installation.

Jason O'Dell
(503)992-3294
jodell@forestgrove-or.gov

# City of Forest Grove
# Engineering Conditions of Approval

Applicant/representative shall sign below and return to City Engineering. Applicant/representative has read the conditional approval form and understands the conditions of approval outlined to this project. Not meeting these conditions may result in withdrawal of engineering approval to project.

GENERAL

1. All plans submitted to date are considered preliminary only. Upon completion of land use application approval, detailed construction plans and specifications must be submitted to engineering that demonstrate compliance with standards and regulations adopted by the City of Forest Grove and/or all other agencies that have jurisdiction including Clean Water Services, Washington County, Oregon Department of Transportation, and the conditions of approval as passed by the City Planning Commission for Land Use Approval. Contact engineering for questions on detail construction plan check process and the required number of construction plan sets/specification required for the detailed review.

2. All detailed construction plans submitted shall be stamped by an Oregon registered professional engineer.

3. All information related to vertical and horizontal location including in documents containing legal description, Draft Development Plan, Final Development Plan, Final Plat, Right-of-Way Deed, or Easement, and Record Drawings must be on the City of Forest Grove current City Datum. Narrative of City Datum including Bench Mark information is available through City Engineering Department.

4. Prior to issuance of Building Permit, Applicant will enter into an agreement with the City of Forest Grove for the construction of public facilities (if necessary). City will prepare Agreement Allowing Developer to Construct Public facilities. The Agreement document shall be fully executed by City and Developer prior to start of construction.

5. Public improvements shall be in place and accepted by the City Engineer prior to issuance of building permits for new lots of record.

6. Final Development Plans and Specifications containing design for construction of public facilities shall receive approvals (as applicable) from City of Forest Grove, Clean Water Services, and other affected jurisdictional agencies. Developer is responsible for all submittals, approvals and permit acquisitions, unless advised otherwise by the City. Permits, if required, shall be secured by developer or authorized representative prior to start of construction (e.g. both on-site and off-site construction).

7. It is the responsibility of the Applicant to ensure that the project contractor is aware of, and abides by, all conditions of approval. Prior approval from engineering must be received before any changes are constituted in site design, grading, building design, building colors or materials, etc.

8. Applicant shall, at applicant's expense, and under City's direction, provide for traffic control, during construction, so as to minimize the impact on residents surrounding or adjacent to the Project. Applicant agrees that, during any construction within or as a part of the overall Project, all existing

roadways as of the date of approval of this project, at all times, remain passable to a minimum of two lanes of traffic, one in each direction, or an acceptable detour approved by City. Applicant further agrees that if, at any time, City shall determine that there are not sufficient acceptable traffic lanes or acceptable detours which are passable, that all construction by applicant shall immediately cease upon written demand therefore, by City.

9. Applicant shall replace, or have replaced, or repair or have repaired, as the case may be, all existing infrastructure which have been destroyed or damaged, and applicant shall replace or have replaced, repair, or have repaired, as the case may be, or pay to the owner, the entire cost of replacement by reason of any work done hereunder, whether such property be owned by the City or any agency thereof, by any private, or by any person whomsoever, or by any combination of such owners. Any such repair or replacement shall be to the satisfaction and subject to the approval of the City Engineer.

10. Applicant shall provide such monumentation as may be required by City Engineer, in accordance with accepted standards. The applicant shall post security guaranteeing the payment of the cost of setting the monuments. The cost of setting the monuments will be determined by the City Engineer upon approval of the improvement plans. The Applicant shall pay the engineer or surveyor for the cost of setting the monuments within three (3) months from date of notification by the engineer or surveyor that the monuments have been set. If the applicant does not pay the engineer or surveyor within the three (3) months from date of notification, the City shall pay the engineer or surveyor for the security and refund the difference, if any, to the Applicant.

11. Prior to commencement of project work the project Applicant shall provide proposed trucking routes for all equipment and material deliveries as may be required by the City Engineer. The City shall, at Applicant expense, video the routes to establish preconstruction conditions. Damage to any public improvements, on or off site caused by construction operations, during construction on the subject property shall be repaired to the satisfaction of the City Engineer at full expense to the Applicant. This shall include slurry seal, overlay, or street reconstruction if deemed warranted by the City Engineer.

12. Project Applicant shall obtain, at Project Applicants sole expense, any and all easements or real property which may be required for the development of the Project, and which may be necessary and required in order for Project Applicant to comply with these Conditions of Approval, and the applicable ordinances and resolutions of the City.

13. All engineering design, including, but not limited to, storm sewers and appurtenances, sanitary sewers and appurtenances, streets including, but not limited to, geometrics, sight distances, lighting and sound walls, water systems and appurtenances, signing and striping, landscaping and appurtenances, shall be supported by applicable engineering studies/calculations, as required by the City Engineer.

14. Project applicant shall design/install all improvements and perform all work required for this project in accordance with established City Standards or as approved by the City Engineer and Public Works. Plans for all improvements, including, but not limited to, storm drainage, water and sewer main sizes, either on-site or off-site, shall be in accordance with City Specifications and shall be approved by the City Engineer.

15. The Project Applicant shall be responsible for all work performed by any and all contractors and subcontractors.

16. Detailed plans reflecting the design and construction of all public infrastructure improvements for street, sewer, water, fiber optics and storm drain, both on- and off-site, shall be as directed by the City Engineer. Developer shall have written approval from the City Engineer for any variations from the City's master plans or standards prior to any final approval.

17. The applicant, in order to reduce the tracking of mud throughout the City, shall design/install standard construction entrances, and shall be responsible for cleaning up (or any expenses incurred by the City for cleaning up) mud, debris, etc. from City streets that is attributed to his project during construction.

18. As-built information in the public right of way is to be submitted to the engineering department electronically in ACAD format. Digitized information shall be submitted before requesting a final inspection and should reflect as-built status and information as approved by engineering.

19. Public facilities serving the proposed development, including but not limited to, sanitary sewers, water, streets, storm sewers, electrical power facilities, parks, public safety and schools shall be adequate and meet current City standards; or it is guaranteed that inadequate or nonexistent public facilities will be upgraded or constructed by the applicant prior to occupancy of the project.

20. Except as provided otherwise, in the City's conditions of approval or special specifications for construction of public improvements, the Design and Construction Standards for Sanitary Sewer and Surface Water Management by Clean Water Services shall apply in all matters concerning sanitary sewers and the management of storm and surface water runoff.

21. The recommendations of the traffic study, geotechnical report, and drainage report shall be incorporated into the detailed construction plans and specification review.

22. Unless approved otherwise applicant shall extend utilities and roadways through the project to site boundaries for purposes of future development.

23. Identify in plans and profile, any potential vertical conflict points between utilities. Show provisions necessary to accommodate any such questionable or otherwise close conditions.

DEDICATIONS

24. The Applicant shall provide all necessary easements for streets, alleys, sewer, and water facilities, irrigation, fiber optics, district facilities, and other facilities as may be required by the City. Utility easements shall be at a minimum a clear fifteen feet (15) for one utility and a clear twenty feet (20') for two or more utilities. Easements shall not be split between property lines or as otherwise determined by the City Engineer. The easement widths identified are minimums and in certain circumstances, additional easement widths may be required as determined by the City Engineer.

GRADING/DRAINAGE

25. It is the responsibility of the Applicant to meet all Clean Water Service Standard. City engineering will coordinate and submit a set of completed detailed construction plans (completed City engineering review process) for Clean Water Services review.

26. Regarding drainage, the applicant must identify if the project will impact existing surrounding uses including but not limited to agricultural uses. The applicant shall submit a drainage plan showing enough detail to address the mitigation of impacts on these existing surrounding uses or to conclusively show that there will be no impacts to the satisfaction of the City Engineer. The mitigation of these impacts is the financial responsibility of the Applicant until the City formally accepts the mitigation. Additionally, the Applicant shall bear the financial responsibility of, and shall dedicate to the City, runoff control easements, as needed.

27. The applicant must identify issues where the finished grade of the property is higher or lower than the abutting property or adjacent lots, and a suitable solution acceptable to City Engineering shall be required. Solutions including retaining walls shall be shown on grading plans. Retaining walls shall be structurally engineered if over four (4) feet in height, including surcharge, and will require a separate building permit. Applicant shall ensure proper setback requirement on these measures for mitigating grade differences, including building code requirement of two foot setback from toe of slopes.

28. A geotechnical report shall be prepared and submitted by a geotechnical engineer who will be retained by the Applicant to observe, test, and certify that all recommendations outlined in the Report are fulfilled during construction. The reports shall be less than one year old. The reports shall include information on the nature, distribution, physical, and engineering properties of the soils onsite and/or soils to be used as fill, and include recommendations on grading procedures.

29. Prepare and submit hydrology/hydraulic calculations for sizing of all proposed drainage devices. The analysis shall also determine if changes in the post-development versus pre-development conditions have occurred. The analysis shall be stamped and signed by an Oregon Civil Engineer and prepared per area standard, including Clean Water Services requirements. Local regulations requires certain new development and redevelopment projects/activities to incorporate post construction Best Management Practices (BMPs) into the grading/drainage plans to control pollutants. Please refer to the Clean Water Service guidelines for specific comments and requirements.

30. The applicant shall take every step necessary to contain all dirt, construction materials, and construction run-off on site. No grading or construction-related debris, either directly or indirectly carried by water, will be permitted to leave the construction site.

31. All grading projects require an Erosion Control Plan as part of the grading plans. Grading permits will not be issued until an Erosion Control Plan is approved. Please refer to Clean Water Services requirements.

32. The project shall incorporate site design measures for reducing water quality impacts of the project, in compliance with Clean Water Services requirements. Where feasible, parking lots and other impervious areas shall be designed to drain stormwater runoff to, private water quality facilities, vegetated drainage swales, filter strips, and/or other treatment devices that can be integrated into required landscaping areas and traffic islands prior to discharge into storm drain systems. The use of permeable paving for parking and driveway surfaces is encouraged, to reduce runoff from the site.

Such paving should meet fire department requirements and be structurally appropriate for the location. Such water quality mitigations should plan to meet manufacture required maintenance provision.

33. All new private water quality facilities will be required to sign a Private Water Quality Facility Maintenance Agreement and provide information for City master storm water connection report prior to receiving building permit.

34. Project applicant shall, at Project Applicant expense, shall prepare and submit a Dust Emission Control Plan for Project Grading. The Plan shall require that contractor work specifications shall include provisions for adequate water to be applied during construction in order to control dust disturbance resulting from grading operations. The Plan and related contractor work specifications shall be reviewed and approved by the

35. Prior to City issuance of a grading permit, dust control measures shall be applied in accordance with all ordinances, rules and regulations of the City, including regarding use of water for compaction or dust control purposes.

36. The Applicant shall submit a grading plan to the City Engineer for approval which reflects the recommendations of a final Geologic and Geotechnical study, including construction procedures and/or design criteria. Construction plans submitted to the City Engineering shall conform to the City Engineering Design Standards and include specifications necessary to minimize potential impacts resulting from soil conditions on the project site. The City Engineer or his representative shall verify in the field that all conditions have been satisfied.

37. The project plans shall include erosion control measures to prevent soil, dirt and debris from entering the storm drain system, in accordance with Clean Water Service standards. Drainage from parking lots and private streets to the public right-of-way will be filtered through a City approved systems. The system shall be located on the development property and maintained by the property owner.

38. Pre-development flow from adjacent properties onto the project site shall be maintained or accounted for in the final design.

39. The on-site drainage system must be properly designed to maximize infiltration of roof and/or surface runoff into the underlying soil before discharging into public storm drain, street or alley. Also, the storm drainage from project site can not become a nuisance to surrounding property.

40. Storm pipe video inspection shall be provided to the Engineering Division prior to final approval.

RIGHT OF WAY IMPROVEMENTS

41. Any existing damage or damage incurred during construction to the approaches, curb, gutter and/or sidewalk shall be repaired and/or replaced to the approval of the City Engineer.

42. A State Encroachment permit shall be secured prior to the construction of improvements on State or County Facilities.

43. All street improvements shall conform with the requirements of the Americans with Disabilities Act, including the placement of sidewalk at the rear of the driveway at all driveway locations and adjacent to the back of curb at all non-driveway locations.

44. All proposed streets shall be fully improved in conformance with the City standards to the width required by the City. The Project shall install normal and necessary public improvements along the property street frontages to the satisfaction of the City Engineer.

45. These improvements may include, but are not necessarily limited to, grading, curb and gutter, sidewalk, paving, make-up paving and wheel chair ramps, along with construction of all standard utilities necessary including water facilities, sanitary sewer, and storm drainage systems, street lighting, underground utilities, traffic control devices, landscaping, and automatic irrigation systems. All approved driveway locations shall be constructed to City standards.

46. Public sidewalk location shall be shown on the approved plans. Sidewalks (parallel with public streets) shall be located near property/R.O.W. line unless approved otherwise by the City Engineer. Unless designated otherwise on the approved plans, sidewalks shall be installed concurrent with development of lot(s) of record.

TRAFFIC & LIGHTING

47. Arrange for relocation of all utilities, poles, signals, street lights, etc.

48. Developer shall provide and install the following : (1) all signing including, but not limited to, street names, speed, warning, no parking, vehicular and pedestrian traffic protection and direction, for public rights-of-way and easements; and (2) pavement striping, marking and reflective pavement markers. All such signing, striping and marking shall be shown on the approved plans.

49. All signing shall conform to the City Sign Ordinance in regards to size, design, and location. All signs shall be reviewed, approved, and a sign permit obtained prior to installation.

50. Prior to acceptance of improvements by the City, the developer shall perform roadway surface improvements, such as slurry seal or overlay as required by the City Engineer, and shall install any additional traffic signs, striping and pavement markings determined necessary by the City's Traffic Engineer, after inspection of the final physical improvement, to insure safe operation of all intersections and segments of streets before any building can be occupied.

51. Establishment of new pedestrian crossings at uncontrolled intersections or at mid-block locations on roadways under control of the City shall be based upon an engineering study by applicant, and reviewed and approved by the City Engineer according to evaluation process set by Washington County.

STORM AND SANITARY SEWER IMPROVEMENTS

52. Sewer pipe video inspection shall be provided to the Engineering Division prior to final approval.

53. Regarding septic systems, the applicant must identify if the project will impact existing surrounding

systems. The applicant shall submit a plan showing enough detail to address the mitigation of impacts on these existing surrounding uses or to conclusively show that there will be no impacts to the satisfaction of the City Engineer. The mitigation of these impacts is the financial responsibility of the Applicant until the City formally accepts the mitigation. Additionally, the Applicant shall bear the financial responsibility of, and shall dedicate to the City, runoff control easements, as needed. County standards on setbacks to existing system shall be followed.

54. Public Storm Drain and Sewer pipe materials shall be in accordance with the latest Clean Water Services design and construction standards.

55. Location of sewer and storm mains shall follow City standards or approved otherwise by the City Engineer.

56. Submit Drainage Report. Include (therein) data relevant to treatment and detention of storm and surface water runoff.

EXCAVATION, PAVING, and GRADING

57. Paving shall be per City Standards.

58. Limits of Paving Restoration shall be determined by the City Engineer or Public Works Inspector.

59. All site grading and public improvement work shall conform with the City of Forest Grove Municipal Code, development Conditions of Approval, City of Forest Grove Standard Specifications, Uniform Building Code Appendix Chapter 33-Excavation and Grading, and, if applicable, the Agreement Allowing Developer to Construct Public Improvements.

WATER

60. Water facilities must comply with plumbing cross-connection control standards as required by City Ordinance and State law for the protection of water supplies. Information on acceptable back-flow assemblies is available from the City Water Division.

61. The size and location of all water meters shall be determined by the Engineer/Architect or authorized representative. All water meters will be furnished and installed by the Water Division at the expense of the Applicant.

62. All public water system components must be constructed within public right-of-way or public easements.

63. All water connections to the City Water Distribution system shall be shown on the construction plan submittal review. This includes irrigation water meters for general open areas in a development project. Water irrigation meters and related impact fees will be paid before the Civil/Grading plans are approved and will be based on the City current meter fee schedules.

64. Municipal Code requires that water systems shall be designed to flow a minimum 2000 gpm (medium density) with 20 psi residual pressure at all new fire hydrants. New public water mains shall be sized 8-inch minimum dia. and be D.I.P. unless approved otherwise by the City Engineer.

65. Standard location for public water mains is on the West and/or South side of the public street R.O.W. and additionally, West and/or South of public storm drains unless approved otherwise by the City Engineer.

66. Public Fire Hydrant spacing and location shall conform to City Code and as otherwise required by the City Fire Marshal.

67. All new Fire Hydrants shall conform to current City Standards. City Standards require that all hydrants be equipped with a 4-inch Storz fitting. Where possible, each hydrant location shall be identified with installation of blue reflective pavement marker, adjacent to hydrant, near centerline of street or as determined otherwise by the City Fire Marshal. Hydrants situated outside of public street R.O.W. shall be clearly marked and protected from damage as deemed necessary by the City Fire Marshall.

68. Size of the new water meter service shall be shown on the plans and shall be installed by the Applicant at his/her expense per City Standard Specifications.

69. Domestic and fire backflow-prevention devices, designed to protect the public water supply, shall be approved by the City Engineer in addition to the City Building & Plumbing Official.

70. Water used in conjunction with construction of the project shall be obtained only from pre-approved sources. A permit to take City water for this purpose shall be secured by applicant or representative prior to start of construction activity.

SPECIAL CONDITIONS

- 

If you have any questions about any of the above items, please contact me at nkelsay@forestgrove_or.gov or (503) 992-3230.

Project Engineer: Nick Kelsay

FOREST GROVE OREGON

*A place where families and businesses thrive.*

**Planning Commission – Minutes 04/21/25**
**Community Auditorium and Zoom**
**1915 Main Street, Forest Grove, OR**
**Monday, April 21st, 2025, 7:00 pm**

## CALL TO ORDER AND ROLL CALL:

Commissioner Stenberg called the Planning Commission meeting to order at 7:01 p.m.

The meeting was held in person in the Community Auditorium and remotely via video conferenced by Permit Technician Shannon Reynolds. To view the recorded meeting, please visit the City of Forest Grove website. The public was allowed to attend via Zoom or observe in the Community Auditorium.

**Roll Call:**

**Present in Person:** Commissioners Dave Anderson, Tim Farrell, Seth Berdahl, Julie Stenberg, and Nicole Ellis.

**Present on Zoom:** Commissioner Brandon Culbertson

**Planning Commission Excused:** Chair Ginny Sanderson

**Staff Present:** Dan Riordan; Senior Planner, Shannon Reynolds; Permit Technician and Suzie Curtis; Permit Coordinator

## PUBLIC MEETING:

1. **PUBLIC COMMENT PERIOD FOR NON-AGENDA ITEMS:**
   No public comment

2. **WORK SESSION:** TV HWY bus rapid transit locally

   Presentation by Kate Hawkins with Metro and Dave Aulwes with Tri-Met regarding the Locally Preferred Alternative (LPA) for bus line 57 which serves as a main transportation line connecting cities from Forest Grove to Beaverton and those between (Cornelius, Hillsboro and Aloha). The project is seeking Federal funding and with that they are presenting to each of the organizations/cities that would be impacted by changes. Both Kate and Dave shared information, updates on proposed stops, safety and adjustment to potential schedule. Commissioners asked questions involving the project and responses were provided by presenters.

DRAFT

### 3. PUBLIC HEARING:

File Number 311-25-000005-PLNG – Proposed Development Code Amendments to add the Federal Emergency Management Agency (FEMA) Model Floodplain Management Model Floodplain Management Ordinance

## STAFF REPORT:

City of Forest Grove Senior Planner Dan Riordan provided a Power Point presentation on the recommendations from the staff report that were reviewed.

Option 1 – Prohibit all new development in the floodplain
Option 2 – Incorporate the Environmental Species Act development standards into local floodplain ordinances through the FEMA Model Ordinance.
Option 3 – Require a Floodplain Habitat Assessment with applications for development in the 100-year floodplain showing their proposed development will achieve "no net loss" of "floodplain functions".

Mr. Riordan recommended option 2 as advised by the city attorney that this option complies with Oregon land use planning rules.

Option 1 is the most restrictive and it could be claimed that property is being taken for a public purpose as all developments are prohibited.

Option 3 does not fully comply with land use planning rules in Oregon as the standards would not be in the development code.

Mr. Riordan responded to the commissioner's questions. Staff provided the recommendation for the Planning Commission and upon completion of discussion among the commissioners a motion was moved. This will be presented to the City Council at their next meeting scheduled on Monday, May 12th, 2025.

The public hearing was called to close at 8:15 p.m.

**COMMISSIONER DISCUSSION:**
Chair Stenberg asked for a motion to recommend to the City Council regarding the items outlined in section B of the public hearing.

Commissioner Farrell made a motion to affirm the recommendation to the City Council. Commissioner Ellis seconded the motion.

**Roll Call Vote on Motion:**
AYES: Commissioners Anderson, Berdahl, Culbertson, Ellis, Farrell, and Stenberg
NOES: None

ABSTAIN: None
ABSENT: Chair Sanderson

MOTION CARRIED

**BUSINESS MEETING:**

1. **Approval of Minutes**:
   March 3rd, 2025, minutes were approved by acclimation

2. **Director's Report:**
   Dan Riordan provided the commissioners with a director's report in Bryan's absence.

   Dan informed the commission that the Forest Grove Forward 2040 Vision Labs have begun with mentor experts and community members. Dan noted that Vision Labs would inform an action plan to implement the City's Vision Statement.

   The Downtown Glow-Up project is underway and will be addressing several items such as new trash receptacles through-out, tree removal and replacement due to sidewalk lipping issues along with the removal of the metal grates to be replaced with a new lighter weight system, new electrical access/conduit for tree lighting along with a few other improvements. This project started on Monday, April 21st, 2025.

   Dan noted that upcoming items for the planning commission include a major modification to the conditional use permit for the Neil Armstrong Middle School and allow stadium lighting by the athletic field. The second item is a site plan and design review application for a proposed project on 23rd Ave West of Main St.

   Commissioner Farrell asked for an update on the Brown's Farm project on Sunset Dr. Dan noted the developer is attempting to record the plat for 3 parcel partition. This has delayed the start of development

3. **Announce next meeting:** Monday, June 2nd, 2025

**ADJOURNMENT:** The meeting was adjourned at 8:27 p.m.

Respectfully submitted by:

_____
Suzie Curtis
Permit Coordinator

FOREST GROVE
# FORWARD
YOUR VOICE, YOUR VISION

## City Council Meeting
## May 12, 2025

SSW CONSULTING



**01**
Forest Grove Forward Project Overview

**02**
Community Engagement +Outreach Snapshot

**03**
Community Input for Vision of Forest Grove in 2040

**04**
Draft Vision, Values, Goals, + Outcomes

**05**
Questions, Discussion + Next Steps



# 01

# Forest Grove Forward Project Overview

# What is Forest Grove Forward?

FOREST GROVE FORWARD
YOUR VOICE, YOUR VISION

Forest Grove Forward is a community visioning project where we will translate community aspirations into a clear vision for 2040 to guide the City's strategic planning and decision-making.

This is an inclusive process to engage community members to have a voice in how they want Forest Grove to look, feel, and function in the future.

# What does the community vision include?

- A shared vision that describes the community residents want Forest Grove to be in 2040
- A set of community values that describe what is important to people in Forest Grove and what should guide us in implementing the vision
- An action plan with specific goals that describe the future conditions for the community and supporting actions that outline focused approaches to achieving the goals.

# Why is having a community vision important?

Cities have many complex priorities to juggle in creating vibrant, resilient, and inclusive communities.

As Forest Grove considers topics – such as housing, roads, utilities, economy, parks and recreation, public safety, and climate – it is important to have broadly supported direction and an actionable plan that is aligned with the values and aspirations of the people who live and work in Forest Grove.

# Process Overview




## 1 SCOPING + PLANNING

- Project Charter
- Project Game Plan + Timeline
- Review background materials
- Steering Committee recruitment materials

## 2 ENGAGEMENT STRATEGY

- Updated Community Profile
- Stakeholder Map
- Project Brand + Key Messages
- Communications + Engagement Plan
- Steering Committee kick-off meeting

## 3 ENGAGE COMM. + ORG.

- Vision outreach materials
- Conduct engagement
- Engagement summary
- Engagement evaluation report
- Steering Committee Meeting

## 4 VISION DEVELOPMENT

- Engagement database
- Draft Vision, Values, and Goals
- Present draft VVG to City Council, Steering Committee, staff, and community
- Gather input + refine

## 5 ACTION PLANNING

- Vision lab focus groups
- Develop supporting actions for each goal area
- Incorporate comments from public review to refine VVG
- Steering Committee meeting
- Draft Vision + Action Plan
- Outline implementation structure

## 6 FINALIZE VISION + ACTION PLAN

- Final public comment period
- Finalize Vision, Values, Goals, and Initiatives
- Present Community Vision + Action Plan to City Council for adoption

## 7 IMPLEMENT + CELEBRATE

- Implementation memo with recommendations
- Training templates and materials
- Progress reporting tools
- Launch Vision!

# Project Schedule



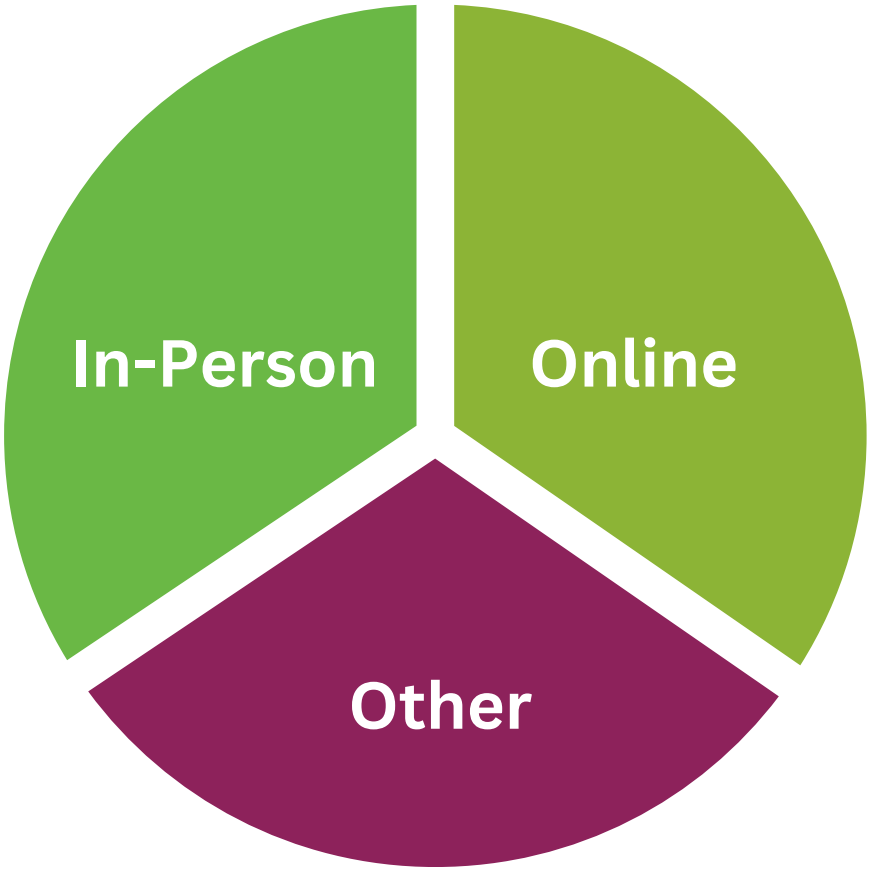


# 02

# Engagement + Outreach Snapshot

# How have we engaged Forest Grove?

- Community Events
  - Farmers Markets, National Night Out, Festival of the Arts, High School Football Game, Annual Town Hall, Sidewalk Chalk Art Festival, Corn Roast, Oktoberfest, and more!
- Business Community
  - Engaging with Local Businesses
  - Economic Development Commission
  - Chamber Events
- Partnership with Veritas
  - 1:1 Interviews
  - Group Event
- Youth Engagement
  - FGHS Football Game
  - Teen Library Council
  - Mayor Youth Council
  - FGHS Lunch Engagement
- Steering Committee Meetings
- Rotary Club




- Utility bill inserts
- Posters, flyers, table tents
  - Local businesses, Pacific University, apartment complexes, senior living communities, + City facilities
- Community Leader Interviews

- Community Survey
- Forest Grove Social Media Pages
- Forest Grove E-Newsletter
- City Website
- Chamber partnership - social media and e-newsletter
- Pacific University - distributed content and survey link to all University Clubs and organizations

# Who did we hear from?

- 9 Community Leader Interviews
- 4 Community Group Meetings
- 60 Participants at Community Meetings
- 1,597 Community Survey Respondents
- 25 Community Events
- 2,300+ Engaged at Community Events
- 1 Latino Outreach Event
- 57 Latino Intercept Surveys
- 59 Businesses Visited
- 26 Apartments and 2 Senior Living Facilities Visited
- 7 Pacific University Student Meetings/Events
- 5 Youth Meetings/Events





# 03
# Community input for Vision of Forest Grove in 2040

# What should we preserve into the future? What do people love about Forest Grove?

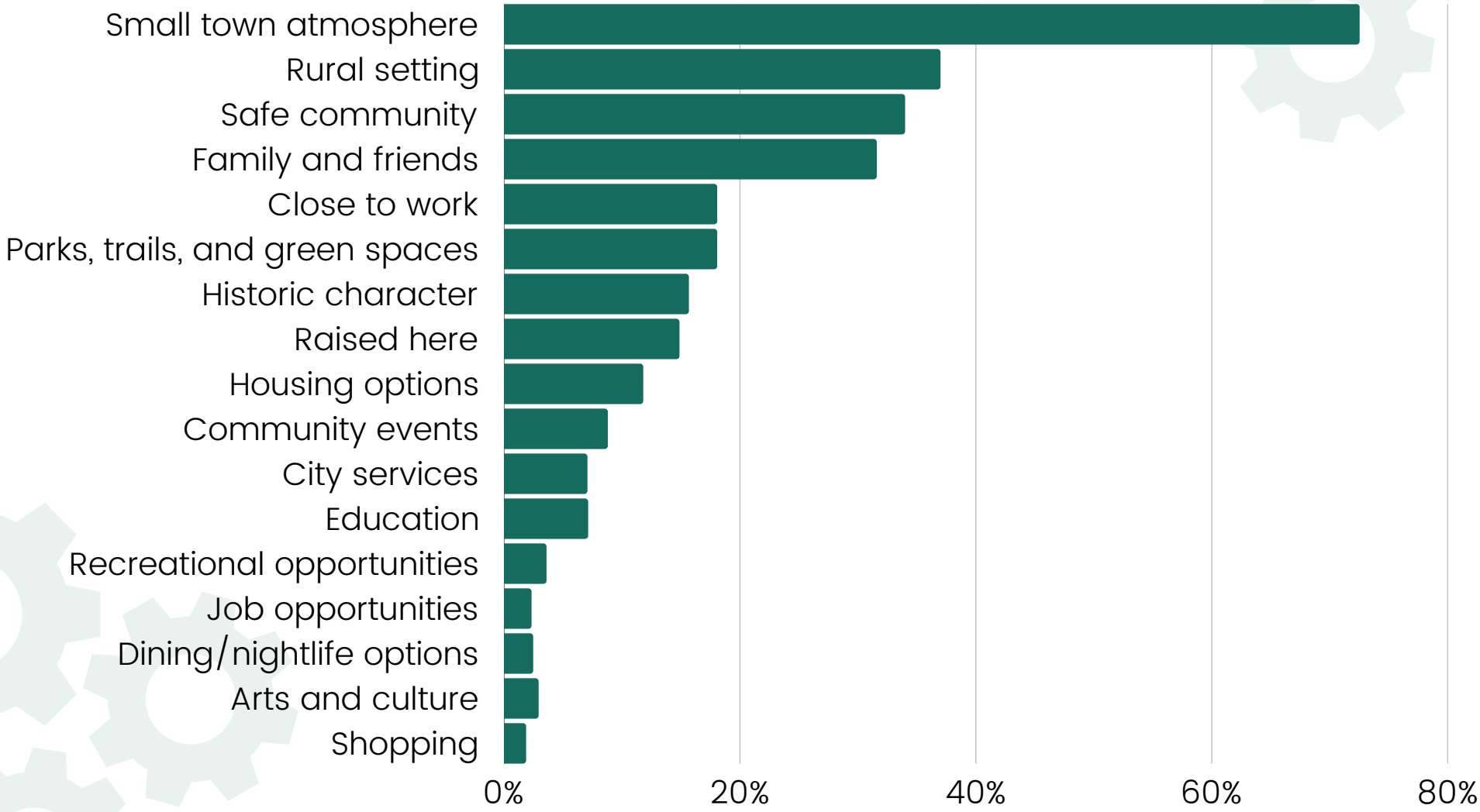


# What do you like most about Forest Grove? What should we preserve into the future?




- Size of community/small-town feel (43%)
- Downtown/Local businesses (7%)
- Environment (9%)
  - Trees, natural environment, rural setting, trees, farmland, open spaces
- Community Events (5%)
- Parks + Recreation (5%)
  - Preserve the parks/green spaces, add more parks/amenities
- Maintenance and cleanliness
- Historic Preservation (5%)
  - Houses, neighborhoods, downtown, businesses, trees
- Transportation/Mobility (5%)
  - Walk-ability, easy to get around, minimal traffic, GroveLink/Tri-Met

# What are the top three reasons why you live, work, learn, play, or visit in Forest Grove?



# Vision: What is our desired state in the next 15 years?

## Vision Themes from Community Survey + Events:

- Unique identity, not a Portland suburb
- Preserves the warmth, charm, and close-knit spirit that people love about small-town living
- Thoughtful growth - Intentional about the kind of businesses and housing that are brought into Forest Grove
- Preserve natural environment – trees, green spaces, farmland
- Historic character – homes, neighborhoods, trees, downtown
- Family friendly - Great schools, activities for youth, parks, events
- Bike friendly/walkable + easy to get around town
- Vibrant downtown - Honors historic feel, clean, locally owned businesses, full occupancy
- Safe
- Lots of community events and opportunities for residents to gather, spend time together

# Vision: What is our desired state in the next 15 years?

## Vision Themes from Veritas Outreach:

- Tranquil, small-town feel
- Cleanliness
- Parks
- Job opportunities
- Affordable housing
- Lack of homelessness and crime

## Vision Themes from Youth Outreach:

- More opportunities to shop, eat, play, and gather in town
- Connected and supportive community
- Preserve natural beauty and access to nature

# Vision: What is our desired state in the next 15 years?

## Vision Themes from Business Outreach:

- Better access to stores downtown (parking and sidewalks)
- Beautiful and aesthetically-pleasing downtown to draw in residents and tourists
- Tourism
- Support for small businesses
- Active communication between City and business community



# 04

# Draft Vision, Values, Goals + Outcomes

# Definition of Vision + Values

## VISION

The community's desired future state. Vision statement attributes include:

- Aspirational
- Clear and concise
- Future-oriented
- Inclusive
- Inspiring
- Values-based
- Serves as "North Star"

## VALUES

Guide decisions, behaviors, and culture within a community or organization. The values serve as a compass in implementing your vision and goals. Values should:

- Clear and understandable
- Actionable
- Enduring
- Shared
- Aligned with vision

# Draft Vision

## ROOTED IN CONNECTION, GROWING WITH PURPOSE.

In 2040, Forest Grove serves as the gateway to Oregon's rural tranquility and urban innovation, situated between mountains and metropolis. We are a destination with a vibrant downtown and local economy where independent businesses thrive, education inspires and provides opportunity, recreation amenities abound, and neighbors truly connect. Through thoughtful, sustainable growth and collaborative spirit, we cultivate a high-quality, safe, and affordable life honoring our history and welcoming all who visit and call Forest Grove home.

# Draft Values

## SUSTAINABLE

Together, we strive toward a sustainable future—where our commitment to environmental care, responsible financial choices, thoughtful community growth, and resilient infrastructure ensures a thriving, inclusive city for generations to come.

## SAFE

We aspire to be a community where everyone feels secure, supported, and prepared—where public safety is a shared priority, health is nurtured, and we stand resilient in the face of emergencies, united in our care for one another.

## CONNECTED

We envision a deeply connected community—where neighbors know and care for one another, where inclusive engagement thrives, and where thoughtfully designed spaces and infrastructure bring people together, preserving a small-town spirit as we grow.

# Goals, Outcomes, + Actions

## GOALS + OUTCOMES

There are five proposed goal areas for Forest Grove Forward. Each goal area will have a goal statement describing the overall goal focus, followed by outcomes which describe the specific results the 2040 Vison aims to achieve. These outcomes translate the broad goal area into specific targets.

## ACTIONS

Specific actions will support the advancement of each outcome. Actions are specific projects, programs, initiatives, policies, or operational changes the 2040 Vision undertakes to achieve the desired outcomes. They are the concrete steps towards achieving the vision.

# Goal Area: Economy

## DRAFT OUTCOMES

1. Attract higher paying job opportunities
2. Connected business community
3. Revitalized downtown
4. Foster a community identity and sense of place
5. Support access to high-quality education for all

# Goal Area: Community Growth

## DRAFT OUTCOMES

1. Increase the supply of diverse and affordable housing options to meet current and future needs
2. Improve major thoroughfares with balanced traffic management and safety enhancements
3. Improve public safety response in Forest Grove

# Goal Area: Healthy + Active Community

## DRAFT OUTCOMES

1. Increased recreation opportunities for all
2. Increased accessibility and safety for all recreation amenities
3. Improved health and well-being for all Forest Grove residents

# Goal Area: Infrastructure

## DRAFT OUTCOMES

1. Build and maintain resilient, efficient, and financially sustainable infrastructure
2. Enhance mobility and safety through thoughtful planning and design
3. Enhance walkability and community connectivity through pedestrian and bike friendly infrastructure and enhanced transit options

# Goal Area: Community Connection

## DRAFT OUTCOMES

1. Inclusive and accessible spaces for people of all ages to gather and connect
2. Increased engagement through community wide awareness of news and events
3. Active civic engagement and increased collaboration among community organizations, volunteers, and the City



# 05

# Questions, Discussion + Next Steps

# Next Steps

- MAY 21
  - Staff Leadership Team Workshop
- JUNE 9
  - City Council Update
- JUNE 9-22
  - Community Review
- JUNE 17
  - Steering Committee Meeting
- JUNE 23
  - City Council Review
- JULY 14
  - City Council Adoption

